DOCTOR OF CLINICAL PSYCHOLOGY (DCLINPSY)

Doctorate in Clinical Psychology: Main Research Portfolio

1) How do parent-child interactions predict and maintain depression in childhood and adolescence? A critical review of the literature ; 2) Benefits and barriers to attending a support group for relatives of individuals with an acquired brain injury (ABI) ;3) "Pesky gNATs": Investigating the feasibility of a novel computerised CBT intervention for adolescents with anxiety and/or depression.

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Abstracts

Main Research Project

Background: There is some evidence to suggest that computerised Cognitive Behavioural Therapy (cCBT) is effective for reducing adolescent anxiety and depression. However, most studies have used samples of young people in the general population or those who are 'at risk' of anxiety or depression, and so less is known about the usefulness of cCBT for adolescents with clinically significant levels of distress and impairment. **Aims:** This study aimed to investigate the feasibility of using a novel computerised cCBT intervention, "Pesky gNATs," with adolescents aged between 13 and 18 years old who had clinically significant symptoms of anxiety and/or depression. **Method:** Eleven participants were recruited from a Tier 3 Child and Adolescent Mental Health service (CAMHS). Six participants were allocated to the intervention group and received the intervention immediately, and five were allocated to the control group and received the intervention after a delay. Outcome measures were completed pre- and post- intervention. Qualitative data were also obtained during the final session. **Results:** A high participation and retention rate was found for the intervention and the majority of participants described the programme as helpful and identified several benefits of completing the programme. No differences in overall self-reported symptoms of anxiety and depression, self-concept and functioning were found when comparing the intervention and control group on pre- and post- intervention scores. However, decreases in parent-reported symptoms of anxiety and depression and the impact of symptoms on functioning were found across both groups. **Conclusion:** This study demonstrates the acceptability of using a cCBT programme in a Tier 3 CAMHS setting, but shows limited evidence that this intervention is effective at reducing self-reported symptoms of anxiety and depression. Therefore, "Pesky gNATs" may not be appropriate as a standalone treatment for young people with more severe clinical presentations.

Keywords: *Computerised CBT, child, adolescent, depression, anxiety*

Service Improvement Project

Purpose: Several studies have investigated the outcomes of support groups for family members of individuals with an ABI. However, there is limited evidence for the effectiveness of these groups to reduce distress and burden for relatives. This study aimed to evaluate a relative support group and identify how support groups can best meet the needs of relatives during the post-acute rehabilitation phase of recovery.

Design/methodology/approach: Twenty-three relatives of individuals receiving treatment from a Brain Injury Rehabilitation Unit (BIRU) completed a feedback questionnaire about the helpful and unhelpful aspects of attending a support group for relatives, as well as barriers to attending and areas for improvement. A thematic analysis was conducted on the qualitative feedback to capture the key themes in terms of relatives' subjective experience of the group.

Findings: Overall attendance and satisfaction with the group was high and the perceived benefits were identified as feeling connected and sharing experiences with others, giving hope for the future, providing practical information and increasing coping resources. The unhelpful aspects of group attendance were identified as eliciting negative emotions and dominance of group members. The main barriers to attending the group included emotional, practical and interpersonal factors and suggestions for future improvements were to ensure that everyone had a say during the group and for the service to provide relatives with more information about the group prior to their attendance.

Originality/value: This study investigated the subjective experience of relatives attending a BIRU service that offered psychosocial group support to relatives. The results indicated that considerations should be made about the practical, emotional and interpersonal barriers to group attendance when designing and planning group interventions for relatives of individuals with an ABI.

Keywords: *Acquired brain injury, relatives, support group*

Critical Literature Review

Background and aim: Although many studies have examined the contribution of parental factors on youth depression and the quality of the parent-child relationship, the evidence is mixed (McLeod, Weisz, & Wood, 2007; Sheeber, Hops, & Davis, 2001). This may reflect methodological weaknesses, with many studies using self-report methods to assess the quality of parent-child relationships, failing to capture the temporal dynamics of dyadic interactions. This review aimed to investigate the association between parent-child interactions and depression in childhood and adolescence with a focus on objective, observational methodology.

Method: A literature search was conducted between January 2013 and March 2015, and included studies that investigated the association between observed parent-child interactions and depressive symptomology in childhood and adolescence. Database searches, citation searches and screening of recent reviews were conducted to obtain within-subjects cross-sectional studies and longitudinal investigations, as well as between-subjects case-comparison studies.

Results: The search yielded 39 studies which were divided into three main themes of parental behaviour, youth behaviour and parent-child interactive behaviour. The literature demonstrated mixed findings in terms of the contribution of several aspects of parent-child interactions. Maternal disengagement and low positivity, reduced adolescent autonomy, adolescent maladaptive emotion regulation, parental suppression of adolescent positivity and incongruent parent-child communication styles were found to be the factors most consistently related to youth depression.

Conclusion: There is some evidence to suggest that observed aspects of parent-child interactions predict and maintain depression in childhood and adolescence, yet many studies demonstrate little or no contribution of parent-child interaction factors. Furthermore, the factors that mediate the association between parent-child interactions and youth depression remain largely unknown.

Keywords: *Parent-child interactions, observations, depression, childhood, adolescence*

Critical Literature Review

How do parent-child interactions predict and maintain depression in childhood and adolescence? A critical review of the literature

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1. Introduction

Major depression is the most common psychological problem for young people, with approximately 10% of children and adolescents meeting the criteria for a depressive disorder (Costello, Erkanli, & Angold, 2006). Experiencing a first episode of depression in early life is associated with many psychosocial difficulties in adulthood, such as unemployment, substance misuse and other psychiatric disorders (Fergusson & Woodward, 2002; Lewinsohn, Rohde, Seeley, Klein, & Gotlib, 2003). This makes depression an important target for clinical intervention in order to prevent pervasive and enduring negative outcomes later in life. Elucidating the specific mechanisms by which depression in young people is precipitated and maintained is also crucial to improving existing clinical interventions, which currently yield modest effect sizes (Weisz, McCarty, & Valeri, 2006).

Over the last decade, there has been increased interest in the role of family interactions on the onset and maintenance of depression in childhood and adolescence (MacPhee & Andrews, 2006; Restifo & Bögels, 2009; Sander & McCarty, 2005; Stice, Ragan, & Randall, 2004; Yap, Pilkington, Ryan, & Jorm, 2014). The importance of the parent-child relationship in the development of youth depression has been implicated in several theories. For example, both attachment theory (Bowlby, 1980) and the cognitive theory of depression (Beck, 1967) suggest that difficulties arising in the relationship between parents and their children may contribute to the development of depression.

Attachment theory proposes that a child's early experience of their caregiver shapes the development of beliefs about themselves and their expectations of future relationships, known as 'internal working models' (Bowlby, 1980). Whilst a secure parent-child attachment is likely to result in young people believing themselves to be loveable and others as reliable, an insecure attachment may lead to the young person seeing themselves as unlovable and others as unable to meet their needs. Developing negative beliefs about the self as 'worthless' or 'unlovable' are central to the cognitive understanding of depression (Beck, 1967) and therefore the formation of

such beliefs in the context of difficult parent-child interactions are thought to be the underlying cause of youth depression.

Despite both the intuitive and hypothesised notion that family factors play a large role in child psychological wellbeing, the relative contribution of parental factors to child and adolescent depression has found to be small and evidence is mixed. For example, one meta-analysis concluded that although parental factors are associated with childhood depression, the amount of variance explained was relatively low (McLeod et al., 2007). Also, a recent review found little or no association between parenting style (authoritarian, authoritative, permissive) and depression in childhood and adolescence (Yap et al., 2014).

These findings may highlight broader methodological issues that characterise the field, as many studies of the association between parent-child relationships and depression are reliant on parent and child self-report measures of family functioning and relationships. This is problematic for several reasons: first, subjective reporting of the quality of parent-child relationships may be negatively biased due to presence of depressed mood in both parents and young people. Second, parent and child reports are known to differ and parents may give a more positive account of their parenting than their children, possibly due to social desirability (Sheeber et al., 2001). Third, the reciprocal influences of parent and child behaviour are difficult to capture using cross-sectional self-report methods and it can be difficult to establish which parent-child interactive sequences predispose or maintain depressive affect and behaviour.

One way to overcome these potential problems is to use observational methodology for capturing parent-child interactive behaviour. Observational methods are seen as the gold standard in developmental behaviour research, as they can access temporal dynamics and non-verbal communications, providing richer accounts of family processes (Zeman, Klimes-Dougan, Cassano, & Adrian, 2007). Furthermore, a larger contribution of parental factors to youth depression has been demonstrated in observational studies compared with studies using self-report methods (McLeod et al., 2007), suggesting that they are also more sensitive to detect the aspects of parent-child relationships that are relevant to depression.

The aim of the current review is to provide a critical examination of how observed parent-child interactions contribute towards the maintenance and development of depression in young people. A specific focus on observational methodology can facilitate more reliable comparisons between studies and can objectively clarify which aspects of the parent-child relationship are associated with depression. It can also clarify the mechanisms by which the parent-child attachment relationship may predispose or maintain depression and which interactions may contribute to the development of negative beliefs about the self and other (Beck, 1967). Although several extensive depression reviews have broadly covered or included family factors (McLeod et al., 2007; Restifo & Bögels, 2009; Sander & McCarty, 2005; Schwartz, Sheeber, Dudgeon, & Allen, 2012; Yap et al., 2014), the current review offers a specific focus on how observed aspects of parent-child interactions are associated with the development and maintenance of depression.

2. Method

2.1 Data sources

A search of the literature was conducted between January 2013 and March 2015 and only peer-reviewed published studies were included. The search was initially conducted through electronic databases (PubMed, PsychInfo) to obtain key articles using search terms such as (parent* OR parent-child OR family OR mother-child relations OR parent-child relations) AND (depressi* OR dysthym* OR internalis*) AND (adolescent OR youth OR child) AND (interact* OR observ*). Relevant papers were selected and the reference lists of these articles, as well as other relevant reviews of the literature were screened to identify additional papers missed by the database search. Additional articles were retrieved by reviewing citation searches of key journal articles found on Google Scholar.

2.2 Inclusion criteria

Studies were included in the analysis if they met the following criteria: a) use of observational methodology to measure interaction between children/adolescents and their parent(s); b) sample included children and adolescents aged between 0 and 18

years old; c) child and/or adolescent depressive status or symptomology measured as an outcome using standardised tools; and d) associations between parent-child interaction and child/adolescent depression were examined using statistical analyses.

3. Results

The search method yielded a total of 39 peer reviewed journal articles and these studies are summarised in Table 1 (see *Appendix A)*. It was found that 18 studies used a between-subjects design to compare parent-child interactions of children or adolescents who met the criteria for major depression, with young people who had alternative psychiatric diagnoses (e.g. schizophrenia or conduct disorder) or healthy controls. The remaining 21 studies investigated the relationship between various aspects of parent-child interactions and self-reported, parent-reported or teacher-reported child or adolescent depressive symptoms. Of these studies, it was found that 8 used a cross-sectional design and 13 used a longitudinal design.

The ages of participants ranged from 12 months to 18 years of age, but the majority of studies investigated depression in late childhood and across adolescence (between 8 and 18 years). The most commonly utilised method for assessing interactions was observing parents and children discussing topics of conflict or planning a positive event. Affective and behavioural displays were then identified using objective coding schemes and analysed in terms of frequency and duration. A summary of frequently used coding schemes can be found in Table 2 (see *Appendix B)*. Studies were categorised according to whether they focused on parental behaviour, child behaviour or reciprocal interactions between parent-child behaviour, with some studies contributing to more than one section. The studies were then grouped together according to the type of behaviour observed.

3.1 ***Parental Behaviour***

3.1.1 Criticism and Aggression

The role of aversive parental behaviour in the development and maintenance of youth depression has been the focus of many observational studies (Restifo & Bögels, 2009). It is hypothesised that parental aggression and criticism may be associated with depression by modelling negative interpersonal communication, evoking submissive responses and eliciting feelings of rejection in the young person (Eisenberg, Cumberland, & Spinrad, 1998; Keltner & Kring, 1998). Fourteen observational studies investigated the role of critical or aggressive parental behaviour directed at the young person during parent-child interactions, with three studies using cross-sectional methods (Corona, Lefkowitz, Sigman, & Romo, 2005; Tompson, Langer, & Davila, 2012; Yap, Schwartz, Byrne, Simmons, & Allen, 2010), six using longitudinal methods (Burge & Hammen, 1991; Gaté et al., 2013; Hofer et al., 2013; Sagrestano, Paikoff, Holmbeck, & Fendrich, 2003; Schwartz et al., 2011; Schwartz, Dudgeon, et al., 2012) and five using a case-comparison design (Dadds, Sanders, Morrison, & Rebgetz, 1992; Hamilton, Asarnow, & Tompson, 1999; Sanders, Dadds, Johnston, & Cash, 1992; Sheeber & Sorensen, 1998; Sheeber, Davis, Leve, Hops, & Tildesley, 2007).

Studies exploring the relationship between observed parental critical and aggressive behaviour during parent-child interactions and youth depression have found mixed results. Three studies using the same sample found that higher frequencies of parental aggressive and aversive behaviour (defined as being angry, disapproving and argumentative) during a positive event planning task predicted the amount of adolescent self-reported depressive symptoms both cross-sectionally (Yap et al., 2010) and two years later, even when controlling for baseline depressive symptoms (Schwartz et al., 2011; Schwartz, Dudgeon, et al., 2012). In contrast, other studies have failed to find a direct association between parental critical or aversive behaviour during conflict resolution or problem-solving tasks and adolescent depressive symptoms either cross-sectionally (Corona et al., 2005; Tompson et al., 2012) or over time, after controlling for initial baseline depressive symptoms (Burge & Hammen, 1991; Gaté et al., 2013; Sagrestano et al., 2003). One longitudinal study

also demonstrated that higher maternal anger during a conflict task predicted fewer adolescent internalising symptoms two years later (Hofer et al., 2013), suggesting that maternal expression of negative emotion was adaptive for future wellbeing.

There has also been inconsistency in studies that examined differences in amount of parental aversive behaviour between depressed and non-depressed children and adolescents. For example, one study found that adolescents with clinical depression experienced a greater frequency of maternal aversive behaviour during a problem-solving task than those with sub-diagnostic symptoms or no symptoms (Sheeber et al., 2007). Similarly, Dadds and colleagues found that mothers of depressed children showed more aversive behaviour towards their children than mothers of control children during a naturalistic home interaction, but this aversive behaviour was seen to be directed to all siblings, suggesting it was a parental trait (Dadds et al., 1992). Yet, this study did not find a between-group difference in paternal behaviour. Other results have also shown comparable amounts of parental aggressive and critical behaviour during problem-solving interactions for depressed children and adolescents and healthy controls (Hamilton et al., 1999; Sanders et al., 1992; Sheeber & Sorensen, 1998).

Taken together, these studies demonstrate considerable inconsistency in the evidence for the association between aggressive or critical parental behaviour and depression. The studies suggest a more important role for aversive parental behaviour during positive rather than negative tasks, possibly due to the fact that aversive behaviour during conflict resolution tasks may be typical and expected, rather than representing a dysfunctional process. Discrepant findings between the studies may be explained by the fact that several different definitions of parental behaviour were used including aggression, criticism and aversiveness, making it difficult to define exactly which aspects of the parental behaviour are most relevant. The lack of longitudinal evidence looking at whether parental behaviour predicts future depression is problematic, meaning that aversive parental behaviour could represent a reaction to young people's depressive symptoms versus a contributing or maintaining factor. Further investigations into the processes that may mediate the association between aversive parental behaviour and depression are also required, to identify how these behaviours may contribute to the development and maintenance of depression.

3.1.2 Maternal Disengagement

Disengagement during an interaction is characterised by a lack of affection, little emotional responsiveness and reduced attempted communication (Shaw et al., 2006) and may communicate to the young person that the parent is unavailable for emotional support and validation, leading to negative beliefs about the self and others. Four studies investigated the association between maternal disengagement and depression, including three longitudinal studies (Burge & Hammen, 1991; Ge, Lorenz, Conger, Elder, & Simons, 1994; Jacobvitz, Hazen, Curran, & Hitchens, 2004) and one case-comparison study (Dietz et al., 2008).

There is some evidence to suggest that more maternal disengagement during parent-child conflict is associated with depression over time. Jacobvitz et al. (2004) investigated the role of maternal behaviour during a naturalistic observation, where mothers provided caregiving to their children aged 24 months. It was found that greater maternal disengagement, defined as being emotionally distant and not making room for feelings during the task, was associated with teacher-rated but not maternal-rated child depressive symptoms over five years later. Lower maternal task involvement observed during a problem-solving task was also associated with higher levels of adolescent depressive symptoms six months later, but this was not over and above baseline depressive symptoms (Burge & Hammen, 1991). This study also showed that maternal chronic stress but not maternal depressive symptoms predicted disengagement, although these parental variables were not controlled for in the primary analysis. Another study found that more maternal disengagement during an interaction task, defined as low support, responsiveness and communication, was significantly associated with female but not male child and adolescent (ages 9-20 years) depressive symptoms four years later (Ge et al., 1994). However, initial baseline symptoms were not controlled for.

Evidence of a between-group difference for those with and without depression in amount of maternal disengagement has been found. Dietz et al. (2008) reported that mothers of children who were depressed or were at high risk of depression demonstrated more disengagement during a problem-solving task than mothers of control children. Furthermore, they found that mothers of depressed children

continued to show high levels of task disengagement regardless of child remission status, suggesting that maternal disengagement was a stable characteristic of the parent-child relationship. Unfortunately, due to a small sample size, they were unable to make any conclusions about whether disengagement predicted child depressive status.

In conclusion, these studies show relatively consistent support for the association between maternal disengagement and depressive symptoms over time, but in the absence of methodologically robust longitudinal evidence, it remains possible that maternal disengagement is a reaction to young people's depression, may maintain depression after the onset of symptoms or may not be causally related to depression. Yet the observation that parental disengagement was a stable characteristic of the parent-child relationship which did not change after young people are in remission, tends to suggest that it is not simply a response to child difficulties. Nonetheless, maternal disengagement may be attributed to other variables such as maternal mood or depressive status and so further studies accounting for these variables are required. Additionally, the processes that mediate parent behaviour with youth depression remain unknown.

3.1.3 Parental Dysphoria and Low Positivity

Low parental positivity and dysphoria directed towards young people during observed interactions have been studied in relation to youth depression. Expression of parental dysphoria may model a way of coping with difficult interpersonal interactions and serve to discourage young people's expressions of positivity within parent-child interactions (Yap, Allen, & Ladouceur, 2008). Four studies have investigated the relationship between parental dysphoria and low positivity and adolescent depressive symptoms; one looking at concurrent depressive symptoms (Pineda, Cole, & Bruce, 2007), two investigating this association over time (Hofer et al., 2013; Schwartz, Dudgeon, et al., 2012) and one comparing those with high and low depressive symptoms (Messer & Gross, 1995).

The evidence for the association between low parental positivity and youth depression was found to be fairly consistent. Low levels of parental positivity during

a conflict resolution task was shown to be associated with adolescent depressive symptomology cross-sectionally (Pineda et al., 2007), and parents of children with high levels of depressive symptoms showed significantly less positivity than parents of children with low levels of depressive symptoms (Messer & Gross, 1995). Low levels of maternal positivity were also prospectively associated with increased youth internalising symptoms one year later, although baseline adolescent symptoms were not assessed (Hofer et al., 2013). Conversely, Schwartz and colleagues did not find any association between parental dysphoria, which included self-derogatory comments, during positive event planning task and problem-solving tasks, and the onset of adolescent depressive symptomology over two years later (Schwartz, Dudgeon, et al., 2012). However, the concept of dysphoria may differ to that of low positivity as it measured active behaviour such as whining and complaints, rather than an absence of positive behaviour.

These findings show some evidence for the role of low levels of parent-child positivity as a contributing factor in youth depression onset, but there was limited evidence for the role of parental dysphoria. Again, the absence of longitudinal studies assessing and controlling for baseline symptoms or parental mental health limits the conclusions that can be drawn about the causality of the relationship between parental behaviour and depression, and it is possible that low positivity is a result rather than a cause of youth depression. Therefore, it is clear that further observational studies investigating this association are required to explore the differential impact of low parental positivity and dysphoria on child depression and to increase clarity around the distinction between the two concepts.

3.2 Child and Adolescent Behaviour

3.2.1 Emotional Regulation

The process of emotional regulation, which involves "initiating, maintaining, and modulating the occurrence, intensity, and expression of emotions" (Morris, Silk, Steinberg, Myers, & Robinson, 2007), is likely to be an important factor in how adolescents respond to interactions with their parents, particularly in the context of

conflict. Emotional dysregulation during interpersonal difficulties can lead to the development of ineffective conflict resolution strategies, which are associated with internalising difficulties (Eisenberg, Spinrad, & Eggum, 2010; Nolen-Hoeksema, Parker, & Larson, 1994). Twelve studies have investigated the association of adolescent emotional regulation during interpersonal conflict and both the onset and maintenance of depression. One study was cross-sectional (Yap et al., 2010), four were longitudinal (Gaté et al., 2013; Gunlicks-Stoessel & Powers, 2008; Kuppens et al., 2012; Powers, Battle, Dorta, & Welsh, 2010) and seven were case-comparison studies (Dadds et al., 1992; Jackson, Kuppens, Sheeber, & Allen, 2011; Kuppens et al., 2010; Sanders et al., 1992; Sheeber, Allen, Davis, & Sorensen, 2000; Sheeber et al., 2009; Sheeber et al., 2012).

The suppression of emotional expression is a core regulatory strategy in models of emotion regulation, and is held to be maladaptive. Commensurate with this, associations between low levels of adolescent emotional expression during conflict and the onset of depressive symptoms over time have been found. Submissive adolescent behaviour during parent-child conflict resolution was predictive of the onset of internalising symptoms one year later for those with no prior internalising problems, and exacerbated internalising symptoms for those with a history of difficulties (Powers et al., 2010). Also, Gunlicks-Stoessel and Powers (2008) found that girls who reported experiencing increasingly less negative emotion over the course of the conflict with their parents reported significantly more internalising symptoms one year later. Although this effect was found after controlling for baseline symptoms, the outcome was internalising symptoms, rather than specifically symptoms of depression.

Low levels of observed negative affect during conflict has also been shown to differentiate depressed individuals from controls; Dadds et al. (1992) found that lower levels of aversive behaviour of children and young adolescents (7-14 years old) with mixed depression and conduct difficulties during an observed family meal was associated with higher adolescent reported depressive symptomology concurrently. However, this effect was not found for adolescents with depression only. In addition, a second study using the same sample found that depressed young people showed relatively low levels of anger during a problem-solving task with

their parents compared to controls (Sanders et al., 1992). This may suggest either the increased use of emotional suppression during conflict or reflects a genuine absence of negative affect.

In contrast to these findings, other studies have found that depressed adolescents express more negative affect during parent-child interactions. For example, when compared with healthy controls, depressed adolescents have been shown to demonstrate increases in dysphoria across the course of a parent-child conflict task (Sheeber et al., 2012), as well as maintaining depressive and aggressive behaviours for longer durations (Sheeber et al., 2000) and showing longer durations and higher frequencies of anger and dysphoria during conflict (Sheeber et al., 2009). Also, two studies by the same author have focussed on the inflexible use of emotional regulation strategies by measuring the amount of 'emotional inertia' during parent-child interactions, defined as the presence of a stable emotional state that does not change readily (Kuppens et al., 2012). The first case-comparison study found that depressed adolescents showed a greater degree of emotional inertia for positive and negative behavioural displays over the course of parent-child conflict, compared with healthy controls (Kuppens et al., 2010). A further longitudinal study also found that high adolescent emotional inertia was predictive of the first episode of clinical depression two and a half years later in an independent sample of non-depressed adolescents (Kuppens et al., 2012). This result still remained when controlling for parent behaviour, age, gender and number of depressive symptoms, which may show that an inability to modulate affect in response to the interpersonal context is a risk factor for the development of depression. Together these studies instead suggest that showing more emotion or inflexible use of emotion regulation, possibly due to fewer adaptive emotional management strategies, is associated with depression.

One explanation for the discrepancy in findings on the association between the degree of emotional expression and depression, is that young people may be able to express their emotions more readily in low conflict, rather than high conflict environments. Jackson et al. (2011), found that depressed adolescents whose families displayed low parental anger exhibited a greater degree of angry behaviour during parent-child conflict than non-depressed adolescents. However, there were no differences in anger expression for depressed adolescents compared to healthy

controls from a high anger family. Therefore, depressed adolescents from families characterised by high anger and conflict may not feel they can express their negative emotions and avoid escalating negative affect by suppressing feelings.

However, none of the reported studies looking at child and adolescent expressions of affect across the interactions assessed whether reductions in reported negative affect represented greater efforts to control negative emotions or whether young people did not experience conflict with their parents as distressing. Only two studies have explicitly measured adolescents' use of emotional regulation strategies during parent-child conflict. One study found that the association between low levels of positive maternal behaviour during a positive parent-child task and the change in depressive symptoms five years later, was mediated by adolescent rumination (Gaté et al., 2013). In addition, adolescents' use of maladaptive emotion regulation strategies, such as engaging in conflict to solve interpersonal problems and mirroring parental dysphoria, mediated the association between the frequency of aversive maternal behaviour during a positive parent-child task and depressive symptoms concurrently (Yap et al., 2010). Therefore, it seems that negative parental behaviour during a task designed to elicit positive affect may increase adolescent negative affect, activating maladaptive emotional regulation strategies to manage these feelings.

Collectively, these studies show evidence for the use of both low and high emotional expression during parent-child interactions in young people with depression, compared with healthy controls. This could mean that maladaptive emotional responding could be a maintaining factor or response to depressive symptoms. Also, one study demonstrated emotional inertia as a predictive factor for the onset of depression, suggesting that low levels of emotional flexibility during parent-child conflict could be indicative of a predisposing factor for depression. However, only two studies included the use of specific emotional regulation strategies as mediator variables meaning that further studies examining the underlying processes are required. It is also unclear whether the emotional regulation abilities of young people with depression are likely to be reduced due to low mood or whether maladaptive coping strategies were a pre-morbid characteristic for those with depression. Further longitudinal evidence is required to highlight specifically which unhelpful emotional

regulation strategies are being used and which contribute to depression in the context of parent-child interactions.

3.2.2 Reduced Autonomy

Establishing autonomy and independence, whilst maintaining closeness with parents is one of the central tasks of adolescence (Eisenberg et al., 1998). Young people who are not granted an appropriate amount of autonomy in relation to decision-making may be vulnerable to depression, due to assuming a passive role in relationships where their own wishes and opinions are not expressed (Hare, Szwedo, Schad, & Allen, 2014). The association between child and adolescent autonomy during parent-child interactions and depression has been explored in four studies, with two using cross-sectional methods (Kobak, Cole, Ferenz-Gillies, Fleming, & Gamble, 1993; Lewandowski & Palermo, 2009), one using a longitudinal design (Allen et al., 2006) and one case-comparison design (Pavlidis & McCauley, 2001).

It has been found that a lower amount of autonomy during parent-child interactions, such as low levels of adolescent independence and responsibility, predicted higher adolescent rated concurrent depressive symptoms (Lewandowski & Palermo, 2009). Another study found that low levels of adolescent assertiveness, which represents one aspect of autonomy, during a problem-solving task with their parents were found to be associated with increased concurrent depressive symptomology (Kobak et al., 1993). Furthermore, adolescent "autonomy undermining" behaviour during problem-solving interactions with their mother, such as over-personalising a disagreement or recanting an opinion, was found to predict increases in depressive symptomology one year later, even when controlling for baseline symptoms of depression (Allen et al., 2006). Yet, differences were not found between the amount of observed adolescent autonomy during a parent-child problem-solving interaction when comparing depressed adolescents with those with externalising difficulties and healthy controls (Pavlidis & McCauley, 2001).

Overall, research has shown consistency in linking a lack of autonomous behaviour with depression, yet it has looked at a relatively disparate set of constructs and this is a small body of work. Only one longitudinal study has been conducted which limits

the conclusions that can be drawn about the predisposing and maintaining role of reduced autonomy in depression. More work needs to be done to both define this construct and determine its significance and as most studies focused on adolescent behaviour rather than the dynamics, is it unclear whether the adolescent is responding to parental behaviour, initiating behaviour, or both.

3.3 Parent-Child Interaction Factors

3.3.1 Parent-Child Reciprocity of Anger

Parent-child conflict is typical during adolescence, as new roles and responsibilities are negotiated. However, high amounts of conflict during problem-solving tasks are likely to impair resolution of difficulties, limiting opportunities for the young person to learn negotiation skills (Gotlib & Hammen, 1992). Five studies have investigated the association between the amount of reciprocal parent-child aggression and depression, two being cross-sectional studies (Yap et al., 2011; Yap et al., 2010), two longitudinal studies (Schwartz et al., 2014; Schwartz et al., 2011) and one case-comparison study (Sheeber et al., 2000). In contrast to the literature previously described focusing on aversive parental behaviours, these studies have each focused on the interplay between parent and child responding.

It has been reported that female adolescents who responded to their mother's aversive behaviour with aggression during an observed problem-solving task reported more concurrent depressive symptoms, although this reciprocation effect was not true for boys (Yap et al., 2011; Yap et al., 2010), Another study following the same participants also found that adolescent girls were at increased risk for depression around two and a half years later when their mothers reciprocated their angry affect during a positive event planning task (Schwartz et al., 2011), although they did not follow up whether adolescent responses to maternal aggression predicted depression over time. Furthermore, when the same participants were followed up six years later, they found that observed maternal reciprocation of adolescent aggressive behaviour during the event planning task was predictive of the onset of female depression (Schwartz et al., 2014). However, the opposite effect was

found for boys, as *reduced* maternal aggression in response to boys' aggression during the task was predictive of depression over the course of six years. In contrast, a separate case-comparison study comparing mother-adolescent interactions of depressed adolescents and healthy controls failed to find a between-group difference in the amount of mother's reciprocation of adolescent aggression over the course of a problem-solving interaction (Sheeber et al., 2000).

These findings demonstrate emerging evidence that maternal reciprocation of anger increases the risk of female adolescent depression, possibly due to girls being more sensitive to the effects of maternal inability to modulate negative affect. However, there is no evidence to suggest that parent-child reciprocation of anger differs between clinical groups and healthy controls. At present, the body of work investigating this pattern is small and so further longitudinal studies and case-comparison studies are required.

3.3.2 Negative Parental Responses to Child Positivity

Negative parental responses to young people's positive affect during parent-child interactions have been investigated in relation to depression. A lack of reciprocation of adolescent positive affect is likely to reinforce the suppression of positive emotions in the parent-child dyad. Furthermore, recent studies have shown that low maternal warmth was associated with reduced adolescent response to reward (Morgan, Shaw, & Forbes, 2014) which is a clear risk factor for depression. Four studies have explored the relationship between negative parental responses to young people's expression of positive emotion, including two cross-sectional studies (Jacob & Johnson, 2001; Yap et al., 2008), one longitudinal study (Schwartz et al., 2014) and one case-comparison study (Messer & Gross, 1995).

One study exploring the mother-child interactions of young adolescents found that maternal dysphoria in response to adolescent positive affect during event planning and problem-solving tasks was associated with more concurrent adolescent depressive symptoms (Yap et al., 2008). This result has also been replicated in a recent longitudinal study; the aforementioned study by Schwartz and colleagues found that adolescents whose mothers responded to their positive behaviour with

dysphoria during problem-solving-tasks were at increased risk of the onset of depression over the course of 6 years (Schwartz et al., 2014). This study also controlled for symptoms of maternal depression, but did not measure baseline adolescent depressive symptoms. These findings suggest that the discouragement of adolescent positivity in the parent-child dyad may reinforce behavioural displays of depression.

However, two studies have failed to show a relationship between parental responses to child positivity and depression. Firstly, a study that observed parent-child interactions with both children and adolescents did not find a significant association between the amount of parental reciprocal positivity during problem-solving tasks and child or adolescent depression (Jacob & Johnson, 2001). Also, Messer and Gross (1995) looked at interactions between parents and their children, where half had high depressive symptomology and half had low depressive symptomology. Parents of children with high depressive symptoms were shown to reciprocate child positive emotion at comparable rates as parents of children with few symptoms, but the frequency of overall positive parental behaviour was less for parents of children with depressive symptoms.

The limited evidence exploring how parental responses to child positivity are related with depression suggests that parents of depressed children do reciprocate positive affect but on a less frequent basis than children with few symptoms, which may mean that the frequency of opportunities for positive reinforcement may be reduced for young people with depression. There is also some evidence to suggest that negative parental responses to child positivity may be associated with an increased risk of depression over time, accounting for maternal depressive symptoms. Further studies exploring whether repeated suppression of positivity decreases a young person's ability to process reward would also be useful to highlight potential mediators linking positivity suppression and adolescent depression.

3.3.3 Positive Parental Responses to Depressive Behaviour

The development of depression throughout childhood and adolescence is likely to alter family interactions and may be reinforced by the reaction of others. One theory

proposes that adolescent dysphoria can be functional within a conflictual family environment by suppressing parental negativity and criticism (Eisenberg et al., 1998). Also, adult interpersonal theories of depression hypothesise that depression initially elicits care-giving behaviour from others but this reduces over time (Coyne, 1976; Hames, Hagan, & Joiner, 2013). In total, four studies have investigated parental responses to child expressions of depressive behaviour during interactions, all if which were case-comparison studies (Dadds et al., 1992; Pineda et al., 2007; Sheeber, Hops, Andrews, Alpert, & Davis, 1998; Slesnick & Waldron, 1997).

Sheeber and colleagues found that fathers, but not mothers of clinically depressed adolescents were more likely to decrease aggressive behaviour in response to adolescent depressive behaviour during a problem-solving interaction than fathers of non-depressed adolescents (Sheeber et al., 1998). Interestingly, this study also found that depressive status over time was not related with parental responses to adolescent behaviour, suggesting that parent-child interactions were a stable factor and not a response to youth depression. Another study also found that rates of maternal smiling were shown to increase as the child self-reported depressive symptoms increased (Dadds et al., 1992). Conversely, it has been found that when non-depressed adolescents displayed depressive behaviour, parental aversive behaviour also decreased (Slesnick & Waldron, 1997). Also, Pineda and colleagues also found that mothers of adolescents with high depressive symptomology, but not diagnosed depression, responded to displays of dysphoria with *less* positivity during a problem-solving task, compared with mothers of healthy controls (Pineda et al., 2007).

In sum, these studies suggest that adolescent displays of dysphoria tend to elicit more positive parenting behaviour and/or may suppress negative parental or inter-parental behaviour, thus negatively reinforcing depressive behaviour. However, in the absence of longitudinal evidence it is not clear whether this parental response is adaptive or unhelpful. It is notable that alongside the evidence that parents naturally reduce negative behaviours in response to adolescent dysphoric behaviours, two studies suggest that this may happen less for the parents of clinically depressed young people. Again, whether this is a process relevant to the development and maintenance of depression or a reaction to more frequent child displays cannot be established from the cross-sectional findings.

3.3.4 Parent-Child Communication Styles

Attuned or sensitive parent-child communication refers to a parent's ability to recognise and respond appropriately to their child's emotional experience and a lack of attunement can result in poorer coping abilities and intolerance of negative affect (Fonagy, Steele, Steele, Moran, & Higgitt, 1991). Three case-comparison studies have investigated whether the degree of matching between parent-child affective communications differs for adolescents with and without depression (Field et al., 1987; Hollenstein, Allen, & Sheeber, 2015; Slesnick & Waldron, 1997).

One study examined the verbal and behavioural communication styles of parents of depressed adolescents compared with healthy controls (Slesnick & Waldron, 1997). Results showed that parents of depressed adolescents were more likely to pair verbal aversive content with positive affect behaviours during observed parent-child conflict task than parents of non-depressed adolescents, demonstrating a 'mixed-messages' style of communication. This incongruent communication may be confusing for the young person and may represent attempts to conceal negative feelings towards their child, possibly due to social desirability effects. Another study also found that mothers of depressed children were less contingently responsive to their children during free-play and puzzle completion tasks, compared with mothers of non-depressed children (Field et al., 1987).In addition, a recent study looked at affective matching between parents and adolescents during a problem solving task (Hollenstein et al., 2015). They found that clinically depressed adolescents were quicker to return to discrepant affective states and slower to return to matched affective states with their parents than healthy controls, suggesting some difficulties achieving emotional attunement.

The limited existing research shows some evidence that parent-child communication may be incongruent and mismatched and that discrepancies exist between parent-child affective states for depressed adolescents, compared with those without depression. However, due to the absence of cross-sectional or longitudinal studies, it is unclear as to whether this communication style was present prior to the onset of depression or whether it emerged as a result of depression onset. Therefore, future

studies may further whether incongruent parent-child communication styles are associated with self-reported depressive symptoms both concurrently and over time.

3.3.5 Parent-Child Role Confusion

The concept of enmeshment and role confusion has also been explored in relation to youth depression, which may include spousification, where parents rely on children for intimacy and companionship (Sroufe, Jacobvitz, Mangelsdorf, DeAngelo, & Ward, 1985) or parentification, where the child is encouraged to fulfil a parental role by taking on responsibility (Byng-Hall, 2008). Two studies have investigated the association between parent-child role confusion and the association with depressive symptoms over time (Jacobvitz et al., 2004; Sagrestano et al., 2003).

The previously mentioned study by Jacobvitz found that more 'enmeshed' relationships, which included parents relying on their children for guidance at 24 months were associated with higher levels of teacher-rated, but not mother-rated depressive symptoms at age seven years for girls only. This suggests that girls may be particularly vulnerable to parental attempts to give them inappropriate levels of responsibility. Nevertheless, it was not clear from the study whether the overall amount of this role reversal was higher for girls than boys; it may have been the case that girls were more affected because it occurred more frequently. A longitudinal study also found that children who engaged in observed interactions where parents and children acted in a 'peer-like' manner were more likely to report concurrent symptoms of depression, yet this type of interaction was not predictive of symptoms over time when controlling for baseline symptoms and parental depression (Sagrestano et al., 2003).

The research on parent-child role confusion and depression is limited, although both studies demonstrated agreement in terms of the association between adolescent adoption of adult roles and depression. Future studies may use longitudinal methods to investigate whether role confusion is predictive of depression over time. It will also be essential to take account of parental depression, as this is a potentially explanatory third variable. Finally, clarification of the specific child and adolescent

behaviours that typify role confusion is likely to be helpful to find out which behaviours are most related to depression.

4. Discussion

This review summarised the evidence investigating the association between observed aspects of parent-child relationships with the onset and maintenance of depression in childhood and adolescence. Although there was much inconsistency in the findings, several aspects of the parent-child interaction emerged as providing relatively consistent evidence in the association with depression. Within the domain of parental factors, it was found that there was more reliable evidence for the effect of low levels of parental positivity on depressive symptoms, which may suggest that an absence of positive reinforcement rather than active aversive behaviour is more detrimental to child and adolescent wellbeing. In terms of attachment and development of internal working models, young people may come to believe that parents are unavailable for emotional support and the absence of positive interactions may communicate to young people that they are not likeable or enjoyable to be with. These beliefs may be central to the development of low self-worth and subsequent depression. The findings on aversive parental behaviour were largely mixed and although the studies investigating maternal disengagement were more consistent, there was a lack of prospective research, limited the causal inferences that can be made (Branje, Hale, Frijns, & Meeus, 2010).

The evidence looking at child and adolescent behaviour during the parent-child interaction and the association with depression found generally clearer evidence for the role of reduced adolescent autonomy. Negotiating appropriate amounts of autonomy across adolescence has been highlighted as a time where difficulties may arise (Hare et al., 2014) and so adolescents who are not encouraged to develop an identity away from the family may be vulnerable to depression. Heavy reliance on parents for guidance and decision making may result in the development of young people's beliefs around not being able to cope alone and being unable to make decisions without the help of others. These negative beliefs may then predispose and maintain depression, whilst also reducing self-confidence and limiting opportunities

for building self-esteem. The literature on child and adolescent emotional regulation during parent-child interactions also broadly supported the assumption that interpersonal emotion regulatory difficulties are likely to typify depressed adolescents. However, the specific nature of the disturbance identified varied significantly, with evidence for emotional inhibition, inflexibility and under-control each being linked to depression. This variability could be explained by the family context, developmental stage of the child, or whether parents are likely to reinforce emotional expression or not (Schwartz et al., 2012). Again, experiencing overwhelming emotion in the context of the parent-child relationship may form internal working models around the self and other people not being able to tolerate negative emotion, which may contribute to depression. Future studies using mixed methods approaches using both observations of emotional displays and youth self-report of underlying emotions are likely to be helpful to understand the complex processes that occur across parent-child interactions.

Studies investigating parent-child interactive behaviour across the course of the interaction also demonstrated mixed results. Maternal reciprocation of adolescent anger was found to be particularly detrimental for females, rather than males who were more affected by low levels of maternal reciprocation of anger. It is possible that females are more sensitive to mother-child conflict or females at high risk of depression experience more conflict (Schwartz et al., 2014). Furthermore, although the evidence on the association between positive parental responses to young people's dysphoria was mixed, some studies did find that expressions of adolescent dysphoria were shown to increase positive parental or decrease aggressive parental behaviour. This could mean that dysphoria becomes a reinforced behaviour designed to moderate negative parental behaviour in the absence of adaptive conflict resolution strategies, yet further evidence is needed to reliably establish this association. In addition, there was some evidence to suggest that incongruent parent-child communication and affect was related to depression, although it is currently unknown as to whether this aspect of the relationship has any predictive relationship with depression.

Highlighting the parent-child factors that are associated with depression is expected to be useful for designing clinical interventions, especially as the translation of

research findings into effective clinical interventions for young people with depression is currently limited. It is likely that family environments that maintain depression may affect response to treatment, potentially diminishing the beneficial effects of individual evidence-based treatments (Kolko, Brent, Baugher, Bridge, & Birmaher, 2000). Observational research could be translated into clinical intervention through in vivo application with families to identify and change the types of interactions that are known to be related to depression, or the development of associated interviews and questionnaires that tap into dimensions that are relevant to this problem. Although this is a common method for infant attachment interventions, it is clear that the benefits could extend to older age groups. This is particularly suggested by intervention studies which have demonstrated that successful treatment of parental depression can benefit adolescent adjustment, presumably due to a change in family environment (Weissman et al., 2006).

The review also identified several methodological limitations of the research. Firstly, the research has largely neglected the role of father-child relationship and instead has focussed on mother or combined parental behaviours. The role of the father may be important for either buffering or exacerbating negative mother-child relationships and further studies may investigate the relative contribution of the relationship with each parent. Also, although this review only included studies using observational methodology, it is clear that there is much variety in the type of task, the affective and behavioural coding systems, the measurement of depression and the conceptualisation of different parent-child interaction characteristics. Many studies reported used self-reported measures of internalising symptoms and although these do include depressive symptoms, it would be more rigorous to use diagnostic interviews to determine depressive status. In addition, few studies controlled for co-morbid difficulties such as anxiety disorders or behavioural problems. This means that the specificity of the parental behaviours described above for contributing solely to depression over other emotional difficulties must be established. Finally, identification of potential mediating variables explaining the association between parent-child interactive factors and depression was lacking.

4.1 Conclusions and future directions

The review highlighted that further evidence is needed to clarify the specific mechanisms by which youth depression may be developed and maintained by interactions with their parents to identify how to intervene. Future research should consider investigating the potential mediating factors between parent-child relationships and depression, which may help to explain the mixed findings in the literature. Also, as adolescence marks a shift between reliance on parents to peers, studies could investigate how child-peer interactions contribute to depression, but also explore the protective effects of positive relationships with others on negative parent-child relationships. The ability of future research to specifically determine which aspects of parent-child relationships predispose and perpetuate depression in childhood and adolescence is likely to be crucial for improving existing clinical interventions to produce better outcomes for future wellbeing.

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Service Improvement Project

Benefits and barriers to attending a support group for relatives of individuals with an acquired brain injury (ABI)

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Introduction

Background Literature

The impact of an acquired brain injury (ABI) on family functioning has been well documented. Experiencing an ABI is shown to have a significant impact on family roles and responsibilities, with caregiving tasks often being completed by relatives of the affected individual (Degeneffe, 2001; Wells, Dyman & Dumas, 2005). Caring for someone with an ABI has also been found to be a stressful experience, with many studies reporting high levels of carer anxiety, stress and depression in both the acute and post-acute stages[1] (Hawley & Joseph, 2008; Jumisko, Lexell, & Söderberg, 2009; Riley, 2007). It is estimated that over half of relatives of individuals with an ABI experience clinically significant symptoms of depression (Douglas & Spellacy, 2000) and one study found that around 40% of carers reported elevated levels of caregiver strain for up to nine years post-injury (Boycott, Yeoman, & Vesey, 2013).

A high level of carer distress also has implications for the individual with an ABI, as evidence suggests that the psychological wellbeing of family members can impact on recovery. Research has shown that heightened carer distress and difficult family relationships reduce an individual's reclamation of functional skills and decrease the benefits gained from rehabilitation programmes (Sander et al., 2002; Testa, Malec, Moessner, & Brown, 2006). It is clear that not all family members negatively adjust to new responsibilities and several factors predict how relatives cope with distress following an ABI. For example, increased severity and chronicity of patient injury has been found to predict relatives' negative adjustment to an ABI (Ponsford & Schoenberger, 2010; Testa et al., 2006). Also, low perceived social support, high pre-injury distress and the use of emotion-focused coping following an ABI is shown to predict higher levels of relatives' emotional distress (Hawley & Joseph, 2008; Sander, Maestas, Clark, & Havins, 2013).

These findings suggest that the provision of psychosocial support for caregivers during rehabilitation following an ABI is important for both carer wellbeing and patient recovery (Togher, McDonald, Tate, Power, & Rietdijk, 2009). Studies have demonstrated that during acute and post-acute stages of recovery, relatives value

[1] Acute rehabilitation refers to intensive treatment delivered in a hospital setting immediately following an ABI, whereas post-acute rehabilitation refers to less intensive hospital treatment focusing on regaining mobility and independence in self-care (Royal College of Physicians, 2003)

emotional support, information about the rehabilitation process, and information relating to the affected individual's specific diagnosis and prognosis (Lefebvre & Levert, 2012; Sinnakaruppan & Williams, 2001). Nevertheless, it has been suggested that the provision of accessible services and amount of support provided to relatives during the rehabilitation phase may be minimal (Murray, Maslany, & Jeffery, 2006). For example, one study found that relatives received an average of less than six sessions of psychological support throughout their hospital stay during the post-acute phase of recovery, equating to around one session every three weeks (Norup, Kristensen, Siert, Poulsen, & Mortensen, 2011).

Furthermore, few empirically tested interventions designed to improve the wellbeing of relatives have been developed (Boschen, Gargaro, Gan, Gerber, & Brandys, 2007). Various methods of support have been described in the literature, such as the use of telephone support (Hartke & King, 2003), provision of videotaped information (Sanguinetti & Catanzaro, 1987), provision of written information (Morris, 2001) and delivery of individual psycho-education, emotional support and problem solving training (Rivera, Elliott, Berry, & Grant, 2008). In addition, support groups have been a commonly used format for providing psychosocial support to relatives and have shown some success in reducing symptoms of emotional distress. An overview of the evidence is described below.

ABI Relative Support Groups

The effectiveness of relative support groups during acute and post-acute stages of recovery have been evaluated in terms of various aspects of relative wellbeing (see *Table 1*). Studies have found that groups providing relatives with stress management, psycho-education, and skills training in communication and assertiveness have been effective in reducing symptoms of anxiety and depression (Singer et al., 1994; Suzuki & Tanemura, 2011). Also, one study found that a structured educational training group was effective in reducing symptoms of anxiety and depression, but only for those with severe depression (Sinnakaruppan, Downey, & Morrison, 2005). In contrast, other studies have not found significant changes in carer distress (Acorn, 1995; Norup et al., 2011), general mental health status (Suzuki & Tanemura, 2011) or perceived carer burden or family functioning (Brown et al., 1999) following attendance at support groups.

These mixed findings highlight that more information is required to elucidate which aspects of relative support groups are the most beneficial. To this end, one qualitative study has explored the subjective experience of relatives attending an ABI. They found that relatives of individuals with an ABI who had attended an Acceptance and Commitment (ACT) group reported increases in emotional acceptance rather than avoidance, perceived peer support and a sense of moving forward after the group (Williams, Vaughan, Huws, & Hastings, 2014). However, objective outcomes in terms of relative wellbeing were not reported.

Aims and Objectives

The limited number of studies describing group interventions that effectively reduce distress and burden for relatives of individuals with ABI highlights the need for further investigation. Therefore, this study aimed to contribute to the literature by qualitatively evaluating a carer support group for relatives of individuals with an ABI. It sought to obtain the perspectives of all relatives in the service, including those who had attended and those who had not, to highlight any psychological or practical barriers to group attendance. This feedback was collected to use for developing an existing relative support group, to ensure that it was adequately meeting the needs of relatives at the service.

Service Context

The Brain Injury Rehabilitation Unit (BIRU) based in the South West of England, provides post-acute inpatient rehabilitation for individuals over the age of 16 with an ABI. Historically, the unit had provided support groups for relatives of individuals attending the service, which were designed to provide psycho-education using an informal approach. However, the group encountered a high attrition rate and relatives had reported dissatisfaction with group content. Therefore, in January 2013 the service set up a new relative support group that ran once a month for 90 minutes and consisted of a 40 minute presentation followed by a general discussion (see *Appendix D*). The group was yet to be evaluated in terms of relative satisfaction and whether the content and structure was adequate to meet the needs of relatives in a post-acute rehabilitation setting.

Table 1. Review of group interventions for relatives following an ABI

Study	*n*	Group Intervention	Outcome Measures	Findings
Acorn et al. (1995)	19	3 x 5-hour sessions conducted over 3 weekends. Group sessions involving psychological support and education on: 1. Effects of a head injury 2. Management of cognitive/behavioural problems 3. Communication 4. Impact on the family system and caregiver 5. Community resources and advocating for services 6. Legal and financial issues	Jalowiec Coping Scale, Rosenberg Self Esteem Scale, Life Satisfaction Index, General Wellbeing Scale	No significant changes in coping, self-esteem or wellbeing
Brown et al. (1999)	39	10 x 1.5-2 hour sessions of psychological support over 10 weeks covering topics of: 1. Dealing with stress, loss and grief 2. Public perception of brain injury 3. Effects of brain injury on family 4. Communication 5. Coping strategies 6. Resolution of conflicts 7. Community resources	Profile of Mood States, Caregiver Burden Inventory, McMaster Model Family Assessment Device	No significant changes in burden or family functioning, but significant reductions in psychological distress
Norup et al. (2011)	26	Unstructured group with relatives debating topic of their choice: 1. Introduction: relatives tell the group what happened to their family member 2. Learning about different type of brain injury, consequences and recovery by hearing from other relatives	Glasgow Coma Scale, Injury Severity Score, Early Functional Abilities, Functional Independence measure, Quality of Life, SCL-90-R	38% of relatives participated in the group. Relatives who participated in the group had higher anxiety scores at admission than relatives who did not attend. No relationship between amount of support and outcome
Singer et al. (1994)	15	9 x 2-hour sessions conducted on a weekly basis in one of two groups: Stress Management Group (n=7) 1. Self-monitoring 2. Progressive muscular relaxation/visualizatio 3. Relaxation as an active coping skill 4. Cognitive coping with shattered assumptions 5. Cognitive coping with thoughts associated with a stress reaction 6. Social support as a buffer against and an aid in dealing with stress 7. Modulating strong affect Information and Support Group (n=8) 1. Brain injury the aftermath 2. Recovery 3. Realistic outcomes 4. Behavioural management 5. Coping with stress of brain injury	Beck Depression Inventory and State-Trait Anxiety Inventory	Reduced symptoms of depression and anxiety in Stress Management group compared with Information and support group. Stress management group saw decreases in anxiety and depression, whereas Information group saw increases

Sinnakaruppan & Williams (2005)	42	8 x 2.5 hour sessions conducted over 8 weeks. Educational training programme: 1. Memory problems: what it means to have memory problems, why this results from brain injury and how to cope using practical strategies 2. Executive Functioning: dysexecutive functioning, type of executive problems following brain injury and type of questions that family members may consider Emotional problems: common emotional problems of carers and their relatives with brain injury. Discussion of anxiety, depression and anger and ways to cope with these emotions.	Hospital Anxiety and Depression Scale, General Health Questionnaire, Rosenberg Self Esteem Scale, The COPE scale and Functional Independence Measure	Reductions in symptoms of depression and anxiety, but only significant for severe depression
Suzuki & Tanemura (2011)	16	5 x 4-hour sessions conducted on a weekly basis: 1. Basic knowledge of traumatic brain injury: disturbance of attention, memory disturbance, dysexecutive function and behavioural changes 2. Methods for coping with cognitive dysfunction: errorless learning, memory aids, ways of managing problematic behavior e.g. using environmental changes, positive enhancement and time-out 3. Communication skills training: assertiveness training involving role-plays	General Health Questionnaire, Self-rating Depression Scale, State-Trait Anxiety Inventory and Rathus Assertiveness Schedule	Self-rated depression significantly reduced between pre-intervention and 6 month follow up. Reductions in anxiety between pre and post intervention
Williams et al. (2014)		6 x weekly sessions of Acceptance and Commitment Therapy group: 1. Cost of caring for a family member, consideration of values with relation to caring and mindfulness exercise (body scan) 2. Creative hopelessness, potential difficulties of avoidant coping, mindfulness exercise (“leaves on a stream”) 3. Control of internal experiences is the problem, mindful acceptance, discussion around “willingness,” mindfulness of thoughts 4. Consideration of types of discomfort, values discussion, eulogy exercise 5. Willingness discussion, consideration of values, mindfulness exercise (“leaves on a stream”) 6. Consider personal barriers to valued living and identify value-consistent goals.	Qualitative methodology	Thematic analysis conducted and themes identified: Increases in personal awareness, emotional acceptance, perceived peer support, adoption of ACT principles and moving forward after the group

Method

Participants

Twenty-three relatives of individuals receiving treatment from a BIRU took part in the study between June 2013 and June 2014. Participants included both spouses and children of individuals in the post-acute phase of recovery from an ABI.

Design

The study had a cross-sectional design and data was captured at the time of discharge from the service. The experiences of relatives were captured regardless of whether they had attended the group in order to investigate the benefits and barriers to group attendance.

Measures

A questionnaire was designed by the author in collaboration with the Clinical Neuropsychologist based at the unit (see *Appendix E*). Participant feedback was obtained using a mixed-methodology questionnaire that included both closed Likert-scale questions and open questions. The questions were designed to obtain information requested by the service in terms of the proportion of relatives attending the group, how well the group was advertised, how well carer needs were met, benefits and disadvantages to attending, suggestions for group improvements and barriers for those who had not attended the group.

Procedure

All relatives attended a discharge meeting at the end of their family member's stay at the unit and were required to complete a discharge pack of paperwork with BIRU staff. An information sheet, consent form (see *Appendix F)* and the feedback questionnaire was included in the discharge pack of all relatives who completed a discharge meeting during the study time period. The questionnaire was completed independently by relatives, with one questionnaire completed per patient. Distributing the questionnaire to relatives at the end of their family member's stay at the unit meant that they had all been given the opportunity to attend the group and were asked to complete the questionnaire regardless of their attendance at the group. Completed questionnaires were returned to the Clinical Neuropsychologist by the staff who had facilitated the discharge meetings.

Ethical Approval

The study was reviewed and granted ethical approval by the University of Bath Psychology Departmental Ethics Committee (approval number: 13-150) and the North Bristol NHS Audit Committee (study number: 194).

Results

Quantitative data

All quantitative data obtained from the questionnaire was analysed using descriptive statistics. An estimate of the total number of patients discharged over the study time period was calculated based on previous data on the average monthly discharge rate. It was found that 23 out of an estimated 102 relatives at the BIRU completed the questionnaire, comprising 22% of the total sample. Of these 23 relatives, only 11 (48%) had attended the Relatives Support Group.

Length of stay (Question 1)

Results showed that over half of the relatives included in the study had a family member who had been at the unit for over 3 months (52%) and the median length of stay of individuals at the BIRU was 3 months.

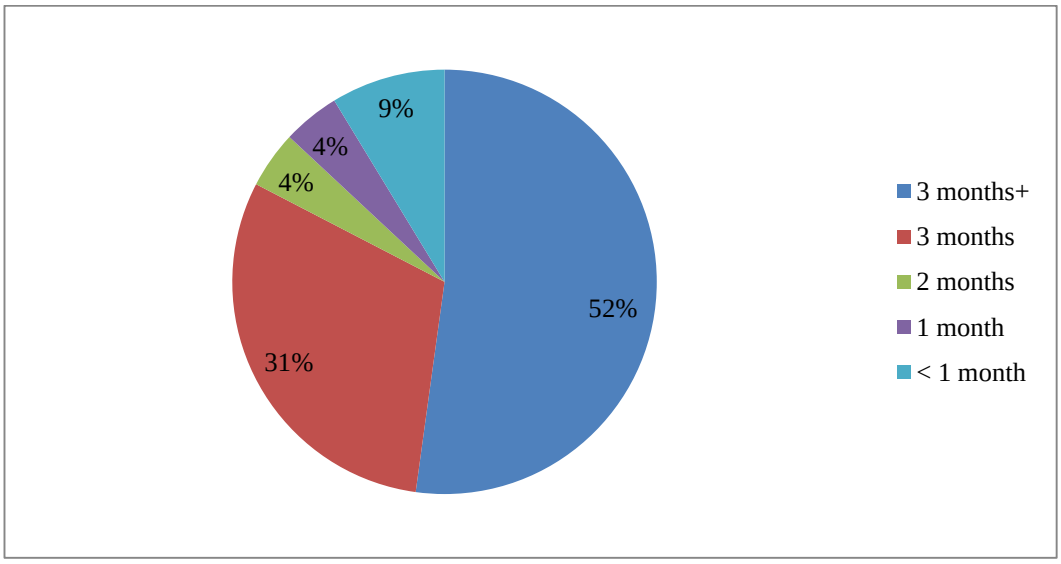

Figure 1. Frequency of length of patient stay at BIRU

It was also found that the relatives who attended the support group were no more likely to have a relative who had stayed for 3 months or more (n=10) than those who did not attend the group (n=9).

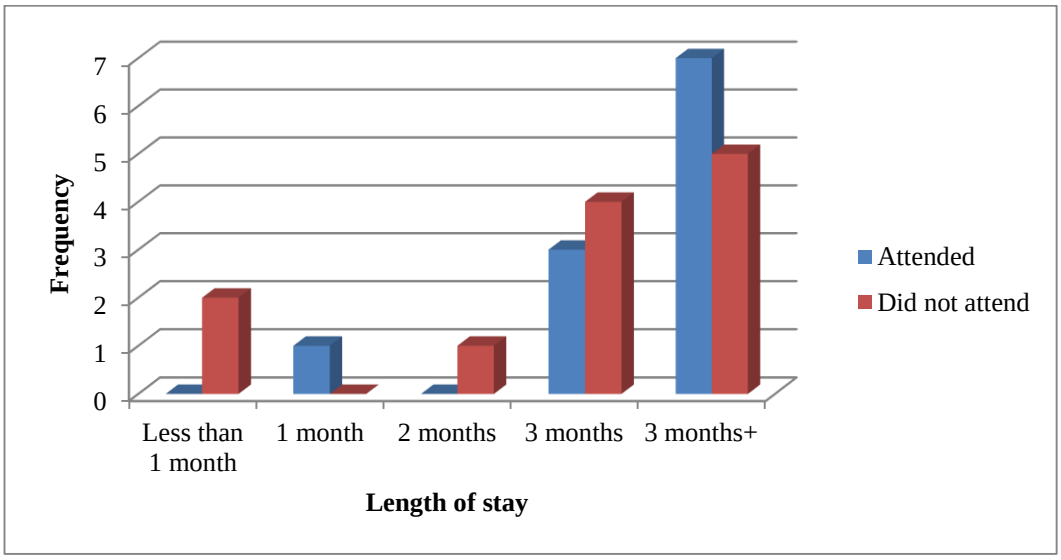

Figure 2. Comparisons of length of patient stay for all relatives who did and did not attend the group

Group Advertisement and Prior Information (Questions 3 and 4)

Twelve relatives provided information about how they had become aware of the group and of these relatives, 11 had attended the group and one had not. It was found that nine had found out about the group through information provided in the reception area, either from the receptionist, poster or small leaflets. The remaining two had been told about the group by other staff on the unit. The 11 relatives who had attended the group all completed feedback on how much information they had received prior to attending the group. It was found that two had received no information about the group, six had received very little and three had received an adequate amount. Furthermore, the information provided by the receptionist, poster or leaflets only included the date, time and title of the group.

Group Attendance and Satisfaction (Questions 2, 5 and 6)

Of the 23 relatives who took part in the study, 11 had attended the group. These relatives had attended the group between one and five times. It was found that only 4 out of the 11 relatives had attended the group on a regular basis (every month).

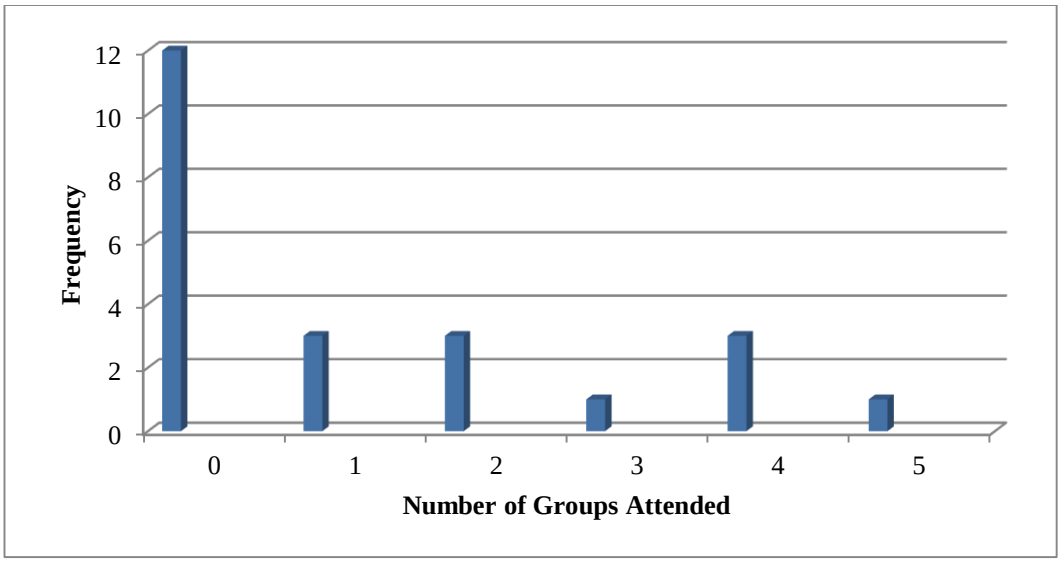

Figure 3. Frequency of number of support groups attended

The ability of the group to meet the needs of relatives was reported by 10 out of the 11 relatives who had attended the support group. It was found that the majority of relatives (n=6) rated the group as 'Excellent' and others rated the group as 'Good' (n=3) or 'Less than satisfactory' (n=1). In addition, nine relatives said that they would recommend the group to others and one said they were 'not sure' if they would recommend the group.

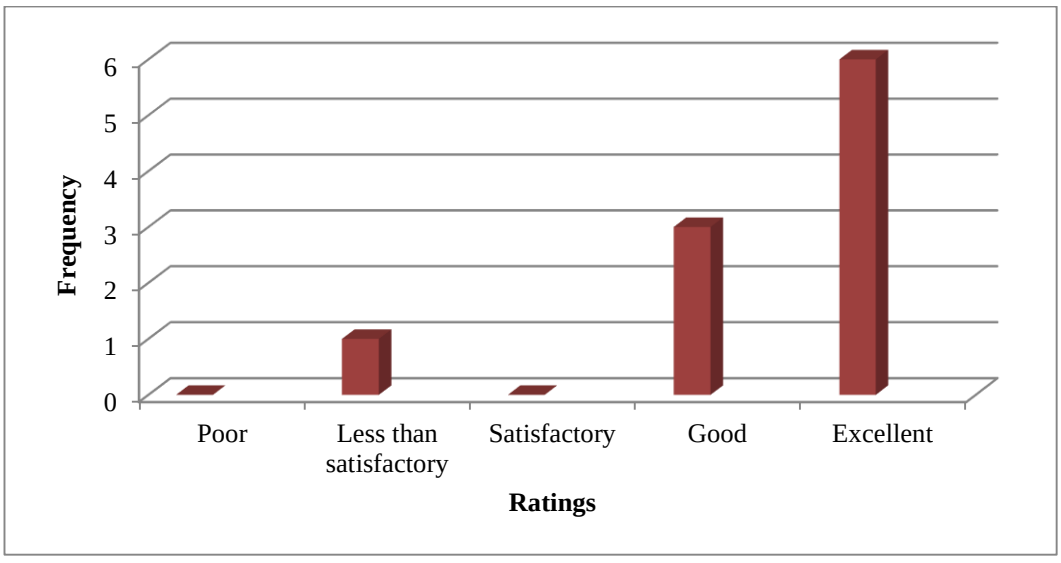

Figure 4. Frequency of ratings about how well the group met relatives' needs

Qualitative data analysis

The questionnaire included four questions about the most and least helpful aspects of the group (Questions 7 and 8), suggestions for group improvement (Question 9) and barriers to attending the group (Question 11). The qualitative responses to these questions were taken from each section and were analysed together to ensure that relevant information in response to a different question was not missed e.g. commenting on benefits under the areas for improvement section. However, only relatives who had attended the group were able to provide responses to all questions and those who had not attended were able to provide responses to Question 11 only.

The data was analysed using the six step thematic analysis method described by Braun & Clarke (2006) (see *Table 2*). Thematic analysis is a method of data analysis used to recognise and report patterns in the data and was chosen over other analytic methods as it is not constrained by theory. Multiple codes were derived for responses within each category and superordinate themes were produced (*see Appendix G*). Data was also analysed by a second independent rater to yield a 91% agreement on themes. Finally, this data along with the quantitative data was used to guide recommendations for group improvement.

1. Benefits to group attendance

Relatives were asked to report the perceived benefits of attending the support group (n=11). The responses yielded 10 codes which were divided into four overarching themes (*see Appendix G, Figure 1)*:

a) *Feeling of connectedness and sharing experiences*

Several relatives reported the benefits of being able to meet other people in the same situation and getting to know other relatives. One relative reported the positive consequence of getting to know other relatives when visiting the service at other times, saying that "y*ou feel you know other family members, which is a nice feeling when you visit BIRU."* Relatives also found the support group helpful in terms of the opportunity to share experience with others, as well as being able to help each other. In addition, relatives found that it was useful to hear other people's experiences, with

one relative highlighting that it was "*reassuring to know that there are other caring people and other people in the same situation as us."*

b) *Giving hope for the future*

Relatives reported that the support group gave them hope for the future, with one person finding it useful to hear about individuals who had moved on from the unit; "*a person whose wife had just left the unit…it gave me hope."* Another relative found that talking of recovery was *"comforting"* and '*reassuring*' and that discussing future outcomes gave them "*confidence/hope."*

c) *Providing practical information*

Several relatives commented on the benefit of the group for providing practical information. Information on increasing relatives' *"understanding what types of brain injury is and what happens,"* as well as *"knowing experiences are common to brain injured patients"* were reported to be valued. In addition, having the opportunity to ask questions was a useful aspect of the group.

d) Increasing coping resources

Some relatives felt that the group helped to increase coping resources by being able to hear "*how other relatives cope"* and by being provided with practical information which helped them to know about "*how to cope with different situations."*

2. <u>Unhelpful aspects of group attendance</u>

Relatives were also asked to report any unhelpful aspects of attending the support group (n=11). The responses yielded three codes which were divided into two overarching themes (*see Appendix G, Figure 2)*:

a) *Elicitation of negative emotions*

One participant reported that they had felt guilty when discussing their relative's positive progress, as they were made aware that other relatives may not have had the same experience. They commented that it felt that they had "*intruded on other*

people's experience" and that it was "*difficult to see other relatives clearly in distress"* during the group when talking about their family member.

b) *Dominance of group members*

Several participants commented that they felt that some relatives dominated the meetings and used the group to "*talk exclusively about their relative, rather than discussing the topic."* Also, it was noted that other carers had sometimes gone off topic and had become too "*carried away with their own point of view*."

3. Barriers to group attendance

The barriers to group attendance that were either anticipated by those who attended the group or existed for those who did not attend the group were investigated (n=22). Ten codes were derived and captured by three overarching themes (*see Appendix G, Figure 3*):

a) *Practical barriers*

A recurrent issue raised was that individuals had not been aware that the group existed. Several participants reported that they did not know about the group and one reported that in hindsight they felt that the group would have been useful. One participant felt they did not have the time to attend the group and another felt that they had to *"prioritise spending time with (their) relative"* whilst at the unit, rather than attending a group. Two participants also noted practical difficulties with getting to the group in terms of arranging transport and childcare.

b) *Emotional barriers*

Relatives who had attended the group commented on the negative emotions that had arisen when considering whether to attend the group or not. Three reported worries about experiencing of negative emotions during the group, with one feeling they would not be able to "*cope with emotions."* Another relative thought that they would be embarrassed if they cried during the group and also one relative believed they would need to *"keep a stiff upper lip."* Other relatives commented about being

"*scared about going"* to the group and predicted that they would "*become very emotional"* during the group if they did attend.

c) *Interpersonal barriers*

One participant commented that they did not attend the support group as their relative did not allow it. Also, another relative reported that they did not want to attend due to wanting to avoid other relatives from the unit.

4. Suggestions for group improvement

Finally, relatives were asked to offer any suggestions for how the group could be improved (n=11). The responses were found to yield six codes that were captured by two overarching themes (*see Appendix G, Figure 4)*:

a) *Allowing everyone to make a contribution*

One relative thought that *"it would be useful if relatives suggested topics for discussion"* to discuss at the subsequent groups. Another relative thought that it was important to *"allow everyone to have a say"* during the group. In addition, the same relative suggested that *"a more direct approach from the leader to steer conversation back to the topic"* was needed to ensure that everyone had a chance to share their experience.

b) *More prior information about the group*

One relative felt that more technical information should be provided in the group and another reported that more *"forewarning about the topic for discussion"* was needed to make a decision about group attendance. Also, advertising the group more widely was requested.

Table 2. Results of thematic analysis

Superordinate Theme	Subordinate Theme	Examples
1. Benefits of group attendance	a) Feeling of connectedness/sharing experiences	*"You feel you know other family members which is a nice feeling when you visit BIRU"* *"Being there with other carers…potential framework to share experiences"* *"Very reassuring to know that there are other caring people and other people in the same situation as us."* *"Meeting other relatives of patients and hearing their experiences.* *"Sharing experiences with other members of the group and being able to ask questions"*
	b) Giving hope for the future	*"A person whose wife had just left the unit, gave me hope. Hope that I was as useful in second group – hope I could give her hope for the future."* *"Speaker talking of son's recovery was comforting and interesting."* *"It will give us a clue on outcome and it gives us confidence/hope".*
	c) Providing practical information	*"Knowing experiences are common to brain injured patients."* *"Understanding what types of brain injury is and what happens."* *"Gaining more insight into brain injuries and how to cope with different*

		situations." *"Plenty of time to ask questions and time to reflect."*
	d) Increasing coping resources	*"The opportunity to listen to other carers and how they cope."* *"Interesting to hear how other family members coped."* *"More information (on how to) cope better"*
2. Unhelpful aspects of group attendance	a) Elicitation of negative emotions	*"We felt guilty that our son was doing so well and there were other relatives there clearly in distress. We felt that we shouldn't have intruded on this."*
	b) Dominance of group members	*"Having individuals using the meetings to talk exclusively about their relative, rather than discussing the topic."* *"Carers being carried away with their unique point of view of their own. Too preoccupied with their caring duties so some others may not benefit."*
3. Barriers to group attendance	a) Emotional barriers	*"Initially I thought I would not be able to sit through a meeting because I knew I would become very emotional.* *"(The) receptionist told me I could leave the meeting without any fuss being made if I couldn't cope with my emotions. This persuaded me that I ought to at least try to attend."* *"I was scared about going as I thought it would be embarrassing if I cried in the group, was not like that and it felt nice and comfortable… Initially I thought there would be emotional barriers but it was OK I didn't have to keep a stiff upper lip."*

	b) Practical barriers	*"Difficulties arranging transport and childcare"* *"Prioritizing time spent with relative"* *"Didn't know the group existed"*
	c) Interpersonal barriers	*"Relative didn't want me to come"* *"Want to avoid other relatives"*
4. Suggestions for group improvement	a) Allowing everyone to make a contribution	*"Asking relatives to suggest topics for discussion"* *"More direct approach by the leader in steering the meetings back to the topic in hand and allowing everyone to have a say"*
	b) More information about the group	*""Nice to have forewarning – a particular subject area to help make decision to come."* *"More information about it on arrival and information about group. If I hadn't bothered to read slips, I wouldn't have gone… People get the wrong idea about meetings but if they had more information, people may be more likely to go and find it a great benefit"* *"More publicity"*

Discussion

This study investigated the benefits and barriers to attending a relative support group for family members of individuals with an ABI. The qualitative feedback of relatives highlighted a range of helpful and unhelpful experiences of attending the group, as well as the factors that may have prevented them from attending the group. Relatives reported that the group provided peer support and hope for the future, which has also been found in previous studies looking at the subjective benefits of relatives attending support groups (Sinnakaruppan et al., 2005; Williams et al., 2014). This highlights the importance of using group based interventions to promote social support and enable relatives to share positive experiences of recovery. Also, the group was perceived to be helpful by providing practical information and helping to improve coping resources. It has been found that skill acquisition during support groups is more successful for reducing anxiety and depression than simply providing information (Singer et al., 1995) and so a balance of both information provision and teaching practical coping strategies may be necessary to improve wellbeing.

Relatives' concerns about the group eliciting negative emotion were raised both as a barrier and disadvantage of group attendance. This may have reflected underlying beliefs about the unacceptability to emotional expression and the tendency of relatives of individuals with ABI to use avoidant coping styles (Williams et al., 2014). Furthermore, the use of emotional suppression in adjustment to other health problems has been found to increase distress in the long term (de Ridder, Geenen, Kuijer & van Middendorp, 2008) and so normalising and encouraging emotional expression may be an important aspect of group intervention.

Implications of Findings for Service Improvement

Several recommendations of change to the promotion and provision of the relative support group were discussed with the stakeholder based on the findings. The following changes to group delivery were subsequently implemented:

1. Including the feedback questionnaire in relatives' discharge pack permanently in order to continually monitor benefits and barriers to group attendance.

2. Development of a more comprehensive relative support group leaflet (*see Appendix H)* which was to be routinely distributed to all relatives of individuals at the BIRU at entry to the service via the receptionist. The leaflet was designed to provide relatives more information about the group in terms of format and topic but also addressed reported emotional barriers to attending, by reassuring relatives that they do not have to share personal experience and are free to leave at any time.
3. Development of a 'suggestions box' to be provided to relatives at the support group, so that relatives can request topics for discussion.
4. Feedback of the results and literature review to group facilitators to increase knowledge of the previous methods of group delivery that have demonstrated success for enhancing relative wellbeing.

Feedback from Service

The feedback from the stakeholders of the project was positive and the following statement was obtained by the Clinical Neuropsychologist requesting the project:

"In relation to the findings of the SIP, there were a number of things which emerged. The format of the group seemed appropriate, so we have continued with that. Some of the feedback from relatives was that they were not aware of the group, so we have increased our efforts to raise awareness by putting a section on this in the induction pack, distributing the leaflet and asking key-workers to draw attention to it when first meeting with relatives. We are now confident that anyone who does not wish to make use of this facility does so out of choice."

Limitations

This study was based on a small number of participants who were recruited from one site during the post-acute rehabilitation phase. As the sample comprised of mostly spouses and children, these experiences may not be the same as the views of other family caregivers such as siblings or parents attending support groups. Similarly, relatives' experiences were obtained at the post-acute phase of recovery and may not be generalisable to relatives attending support groups at different stages of recovery. In addition, the data was obtained using a questionnaire format, which may have reduced the level of detail of information provided by relatives compared to if the data was obtained using a semi-structured interview or focus group.

Future Directions

Given the importance of relative wellbeing for both client and carer wellbeing, further research is needed to investigate the outcomes of psychosocial support for relatives of individuals with ABI. Furthermore, the limited existing evidence investigating the outcomes of group support on relatives' wellbeing in ABI calls for the development of manualised and structured group programmes that can be evaluated using rigorous methods. Finally, further service improvement could be made by the BIRU through evaluating the group in terms of relative wellbeing and investigating the psychological predictors of those who benefit from group attendance and those who do not.

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Main Research Project

"Pesky gNATs": Investigating the feasibility of a novel computerised CBT intervention for adolescents with anxiety and/or depression

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Introduction

Depression and anxiety are common psychological problems in childhood and adolescence, with around one in ten experiencing clinically significant symptoms (Costello, Erkanli, & Angold, 2006; Ford, Goodman, & Meltzer, 2003). Evidence suggests that Cognitive Behavioural Therapy (CBT) is effective at reducing symptoms of anxiety and depression for young people (Compton et al., 2004; James, Soler, & Weatherall, 2007) and individual CBT is recommended in the NICE guidelines for mild/moderate depression and anxiety (NICE, 2005a). However, studies indicate that few young people receive help for psychological difficulties (Ford et al., 2003) and barriers including embarrassment and stigma may prevent young people from seeking support (Marks & Cavanagh, 2009). In addition, many young people are not receiving evidence-based clinical interventions (Stallard, Udwin, Goddard, & Hibbert, 2007), which may be due to high demands on child and adolescent mental health services (CAMHS) and the limited availability of trained CBT therapists. This suggests that improved access to treatment for children and adolescents is necessary, which may involve revising the way psychological interventions are delivered.

One way of making psychological interventions more accessible to young people is to deliver them through alternative formats such as self-help websites and computerised CBT (cCBT) programmes. Cognitive behavioural theory proposes that depression and anxiety in childhood and adolescence is developed and maintained by young people's appraisals of situations (cognitions) and their responses to these appraisals (behaviours) (Kendall, 1993). Therefore, cCBT, like standard CBT aims to identify and change young people's thoughts, feelings and behaviours through thought challenging and behaviour change techniques. However, developmental differences between adolescents and adults means that young people may find it difficult to grasp the abstract concepts of CBT, due to their stage in cognitive development. For example, the ability to link thoughts, feelings and behaviours, as well as being able to recognise own thoughts is considered to require meta-cognitive ability which develops later in childhood and therefore requires more guidance in adolescent than adulthood (Barrett, 2000).

This means that adaptations are required for use of CBT for young people which can be achieved using cCBT, such as making concepts fun and developmentally

appropriate by presenting psychoeducation using stories and metaphors and having therapists model and expand on concepts for young people (Friedman & Wilt, 2010). Furthermore, presenting information visually via the medium of technology may make concepts memorable to young people and increase the likelihood of home practice, if completed using computers or mobile phones. However, as research demonstrates that a good therapeutic relationship is associated with positive outcomes in youth interventions (Karver, Handelsman, Fields & Bickman, 2006), it is likely that clinician assisted interventions would provide the most successful format for cCBT interventions.

There is a large evidence base suggesting the efficacy of cCBT for reducing symptoms of anxiety and depression for adults (Gega, Marks, & Mataix-Cols, 2004; Mackinnon, Griffiths, & Christensen, 2008), and although the evidence for using cCBT with children and adolescents is not as well established, preliminary results are promising (Pennant et al., 2015; Stallard, Richardson, Velleman, & Attwood, 2011). The literature currently describes ten different cCBT programmes that have been evaluated for use with young people, with five developed for anxiety, three for depression and two for both anxiety and depression (for a systematic review and meta-analysis, see Pennant et al., 2015).

Although there is limited data on the use of cCBT with children, overall studies show a significant reduction in adolescent symptoms of anxiety and depression, yielding medium effect sizes (Pennant et al., 2015). For example, both therapist-assisted and online cCBT programmes for children and adolescents with diagnosed anxiety disorders have demonstrated favourable outcomes compared with a non-therapeutic control (Khanna & Kendall, 2010; Spence et al., 2011; Wuthrich et al., 2012). Programmes targeting adolescent depression have also investigated the use of cCBT for 'high risk' groups (Abeles et al., 2009; Clarke et al., 2009; Fleming, Dixon, Frampton, & Merry, 2012; van der Zanden, Kramer, Gerrits, & Cuijpers, 2012) and those with clinically diagnosed depression (Abeles et al., 2009; Stasiak, Hatcher, Frampton, & Merry, 2014).

All programmes demonstrated significant reductions in symptoms of depression compared to a non-therapeutic intervention, such as computer delivered psycho-education or no intervention, and advantages were typically maintained at follow-up. Furthermore, some studies reported remission rates to be as high as 80% for anxiety

disorders and clinical depression (Abeles et al., 2009; Khanna & Kendall, 2010; Spence et al., 2011) and studies that have compared cCBT to individual CBT have found comparable outcomes (Khanna & Kendall, 2010; Sethi, Campbell, & Ellis, 2010; Spence et al., 2011).

Only two cCBT programmes for young people have been "transdiagnostic" in that they are designed to target both anxiety and depression. Firstly, "MoodGym," a 5-module online programme that is completed independently, has been found to significantly reduce anxiety and depression for both university students and those at 'high risk' of clinically significant mental health difficulties (Calear, Christensen, Mackinnon, Griffiths, & O'Kearney, 2009; Ellis, Campbell, Sethi, & O'Dea, 2011; Sethi et al., 2010). More recently, Stallard et al. (2011) reported a pilot randomised controlled trial of their 6-session clinician assisted programme, "Think Feel Do," in a Tier 3 CAMHS setting. This study recruited 20 young people and used a delayed wait-list control design, where all young people received the intervention but were randomised to receive cCBT immediately (10 in the treatment group) or after a delay (10 in the control group). This meant that a control group comparison was possible whilst retaining the maximum number of participants in the intervention group. They found that the programme was successful at improving self-esteem and reducing adolescents' negative beliefs about themselves, as well as symptoms of depression. However, significant reductions in anxiety were not found and the small sample size meant that direct comparisons between the intervention and control groups were not possible.

Although these findings suggest that using cCBT with children and adolescents is effective, many of the studies have used samples in the general population or those at risk of developing a mental health difficulty. Only one study has investigated the effectiveness of using cCBT for young people who were experiencing more severe mental health difficulties requiring Tier 3 mental health services (Stallard et al, 2011). Therefore, the feasibility and acceptability of using this method of delivering CBT with young people with more severe and complex difficulties requires further examination.

Novel cCBT Intervention

The "Pesky gNATs" cCBT programme was designed to reduce the symptoms of anxiety and depression for adolescents aged between 13 and 18 years old and uses various strategies to improve young people's ability to cope with their difficulties (O'Reilly & Coyle, unpublished). The development of this adolescent intervention followed an earlier version of "Pesky gNATs" that was designed for children aged 9 to 13 years (O'Reilly & Coyle, unpublished) which has been shown to be acceptable to both young people and clinicians (Coyle, McGlade, Doherty & O'Reilly, 2011). Furthermore, a small scale study has demonstrated promising results for decreasing internalising difficulties to below the clinical cut-off (O'Dwyer-O'Brien, O'Reilly, Coyle & Coyle, 2012). However, the adolescent version was yet to be evaluated.

The seven session "Pesky gNATs" computer game was designed to be completed over seven weeks, with 50-60 minutes allocated per session. The game delivers an adolescent-friendly CBT intervention and is played in session by a young person alongside a mental health professional. A young person and their therapist play the game together as they explore a tropical island game world. As it has been found that using metaphors to explain abstract CBT concepts with young people is clinically useful (Creed, Reisweber & Beck, 2012) and that story-telling increases memory within therapy (Otto, 2000), an unfolding metaphor is used during the game to make the content accessible to young people. Negative Automatic Thoughts are presented as creatures called 'gNATs,' thought monitoring becomes 'gNAT trapping,' cognitive restructuring becomes 'gNAT swatting' and core beliefs are discovered through hunting gNATs back to their 'Hives.' Relapse prevention takes place at the final session at a beach-side cinema. At the end of each session, the young person also has the option to learn a mindfulness or relaxation skill. The programme includes session by session ratings using the Outcome Rating Scale (ORS) and the Session Rating Scale (SRS). For an overview of the programme, see Table 1.

Table 1. Content of Pesky gNATs cCBT intervention

Session	Content
1	Explains the link between thoughts, feelings and behaviours (T-F-B) using examples of positive and negative T-F-B cycles. The young person completes their own positive and negative examples in the session.
2	Describes different types of Negative Automatic Thoughts (thinking biases) using the "gNAT gallery." The young person uses thought record to identify species of gNATs in their own thinking. A "gNAT trap" is used as a way of thought monitoring.
3	Describes more thinking biases using another "gNAT gallery." Introduces the idea of using a gNAT trap to monitor and recognise gNATs (Event-Thought-Feeling-Behaviour cycle).
4	Concept of cognitive restructuring or "gNAT swatting" introduced and practiced.
5	Introduction of Core Beliefs ("Unhelpful Hives") and their association with gNATs. Young person encouraged to identify beliefs using themes in the gNATs that have been identified.
6	Further explanation and identification of Unhelpful Hive and exercise using 'Evidence for' and 'Evidence against' completed. Young person helped to develop a more helpful core belief ("Bee Yourself Hive").
7	Relapse prevention plan and feedback on the game. Other skills taught throughout the game: mindfulness, relaxation and activity scheduling.

The intervention was designed to require substantial therapist input for several reasons. Firstly, it is commonly known that a trusting and supportive therapeutic relationship between the therapist and young person is important for intervention success (Karver et al., 2006) and so this component was seen to be a crucial mechanism of change. Also, therapist presence was designed to help with socialisation to the CBT model by having someone to explain and expand on information according to individual need. This meant that the first author collaboratively worked through the programme with the young person and took an active role in the intervention. The intervention was also created with the help of young people's service user participation group who reviewed the game to ensure it was suitable for their age range.

Study aims

This study aimed to pilot the feasibility and acceptability of using a novel cCBT intervention called "Pesky gNATs," with adolescents aged 13 to 18 years old currently accessing a Tier 3 CAMHS. This aim was in accordance with the MRC framework guidance (2008) for developing and evaluating complex interventions, by assessing rates of recruitment, retention and testing procedures as a first stage in the evaluation process due to the novelty of the intervention. In addition, this study sought to obtain both qualitative and quantitative evaluations of the programme, which is also recommended in the MRC guidance.

The study was designed to answer the following questions:

1. Is Pesky gNATs a feasible and acceptable intervention for use in a Tier 3 CAMHS setting for young people with anxiety and/or depression?
2. If Pesky gNATs is acceptable to young people, what are their views of the programme?
3. Can a preliminary replication of the Stallard et al. (2012) study be made for the novel programme with the addition of a qualitative component?

Firstly, participant recruitment and retention rates were obtained. Qualitative feedback on the experience of using cCBT was also collected from the young people following completion of the programme. Finally, to replicate the study by Stallard and others, a delayed wait-list control design was used to evaluate whether Pesky gNATs resulted in reductions of anxiety and depression and young people's negative view of themselves, as well as increases in functioning. Questionnaires measuring adolescent-reported symptoms of depression and anxiety, the impact of emotional difficulties on functioning, adolescent beliefs about themselves and self-esteem were collected pre- and post- intervention. In addition, questionnaires were used to measure parent-rated symptoms of adolescent depression and anxiety, and their view of adolescent emotional difficulties and were also administered pre- and post-intervention.

Method

Participants and design

Eleven participants were recruited from a local Tier 3 CAMHS service. Participants were aged between 13 and 18 years old and were on a waiting list for individual Cognitive Behavioural Therapy (CBT). Individuals with a suspected or diagnosed neuro-developmental difficulty, such as ADHD or an Autism Spectrum Condition, intellectual disability or co-morbid eating disorder were excluded from the study. In addition, individuals who were refusing school were excluded. Eligible participants who agreed to take part in the study were allocated to one of two groups (see Figure 1).

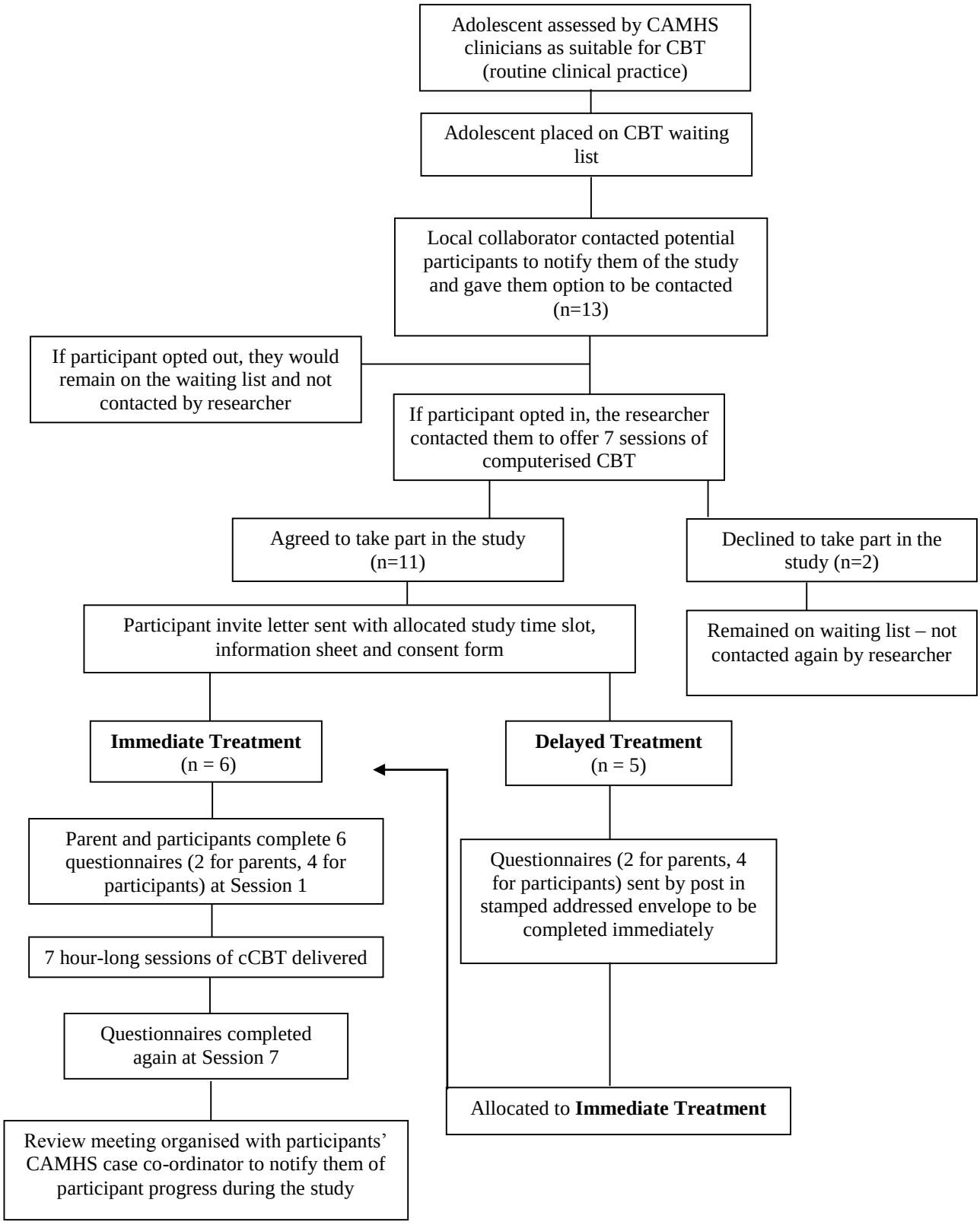

Figure 1. Participant flow through the study

The 'Immediate cCBT' group received seven hour-long sessions of cCBT and outcome measures were completed at the beginning of Session 1 and at the end of Session 7. Session rating outcomes were also completed on a weekly basis. The

'Delayed cCBT' group completed outcome measures seven weeks prior to starting the intervention. Participants then went on to receive the seven hour-long sessions of cCBT and were required to repeat the outcome measures at the beginning of Session 1 and at the end of Session 7. This group also completed session rating outcomes on a weekly basis. The study used a mixed methods experimental design, including both between-subjects comparisons (Immediate vs. Delayed cCBT) and within-subjects comparisons (pre- and post- intervention scores completed seven weeks apart).

Measures

Parent Measures:

Revised Child Anxiety and Depression Scale – Parents Version (RCADS-P; Chorpita, Yim, Moffitt, Umemoto & Francis, 2000). The RCADS-P is a 47-item questionnaire designed for parents of young people between the ages of 8 to 18 years to measure symptoms of depression and anxiety. Parents are asked to rate their child's feelings and behaviour on a 4-point Likert Scale, ranging from 'Never' (0) to 'Always' (3). The questionnaire includes the following subscales: separation anxiety disorder (SAD), social phobia (SP), generalized anxiety disorder (GAD), panic disorder (PD), obsessive compulsive disorder (OCD) and major depressive disorder (MDD). It also yields a 'Total Anxiety Scale' (sum of the 5 anxiety subscales) and a 'Total Anxiety and Depression Scale' (sum of all 6 subscales). A higher positive score indicates a greater number of symptoms and raw RCADS-P scores were used. The RCADS-P has been shown to have good reliability and validity (Chorpita, Moffitt & Gray, 2005).

The Strengths and Difficulties Questionnaire – Parents Version (SDQ-P; Goodman, 1999). The SDQ-P questionnaire is a 25-item measure assessing parent's views on their child's positive and negative attributes. The age range is from 4-16 years of age. The 25 items create five main symptom clusters; emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems and prosocial behaviour. A 'Total Difficulties' score is generated using all scales except the prosocial behaviour scale and a higher positive score indicates the presence of more difficulties. The SDQ-P has been shown to have high internal consistency and validity (Goodman, 2001).

Adolescent Measures:

Revised Child Anxiety and Depression Scale (R-CADS; Chorpita, Yim, Moffitt, Umemoto & Francis, 2000). The RCADS is a 47-item self-report questionnaire designed for young people between the ages of 8 and 18 years to measure symptoms of depression and anxiety. Responses are rated on a 4-point Likert Scale, ranging from 'Never' (0) to 'Always' (3). The questionnaire includes the following subscales: separation anxiety disorder (SAD), social phobia (SP), generalized anxiety disorder (GAD), panic disorder (PD), obsessive compulsive disorder (OCD) and major depressive disorder (MDD). It also yields a 'Total Anxiety Scale' (sum of the 5 anxiety subscales) and a 'Total Anxiety and Depression Scale' (sum of all 6 subscales). A higher positive score indicates a greater number of symptoms and raw RCADS scores were used. The RCADS has been shown to have high reliability and validity (Chorpita, Moffitt & Gray, 2005).

Strengths and Difficulties Questionnaire (SDQ; Goodman, 1999). The SDQ questionnaire is a 25-item self-report measure assessing young person's positive and negative attributes. The age range is from 4-16 years of age and 25 items make up five main symptom clusters; emotional symptoms, conduct problems, hyperactivity/inattention, peer relationship problems and prosocial behaviour. A 'Total Difficulties' score is generated by summing all scales except the prosocial behaviour scale. In addition, the questionnaire asks young people to rate how their difficulties affect their levels of distress and social impairment in the domains of home life, friendships, classroom learning and leisure activities. These scales are summed together to generate an 'Impact' score, reflecting how much their difficulties affect functioning. A higher score indicates more interference of difficulties on level of functioning. The SDQ-P has been shown to have high internal consistency and validity (Goodman, 2001).

Schema Questionnaire for Children (SQC; Stallard & Rayner, 2005). The SQC is a 15-item self-report questionnaire that measures young people's negative beliefs about themselves. Items are rated on a scale from 1 (Strongly disagree) to 10 (Strongly agree). Items are summed to produce an overall score, with a higher score indicating greater endorsement of negative beliefs. The psychometric properties of this measure are yet to be evaluated.

Rosenberg Self Esteem Inventory (RSEI; (Rosenberg, 1965). The RSEI is a 10-item self-report measure of global self-esteem. Items are rated on a 4-point scale of agreement, from Strongly Disagree (1) to Strongly Agree (4). A lower score indicates lower self-esteem. The scale has high internal consistency (Rosenberg, 1965) and validity (Hensley & Roberts, 1976).

Outcome Rating Scale (ORS; Miller & Duncan, 2000). The ORS is a 4-item measure that is designed to be completed session by session. It captures four areas of functioning: personal distress, social relationships, work/school and overall well-being. These four dimensions are rated using four visual analogue scales and individuals are instructed to mark on each line where they are currently functioning. The ORS has good validity and reliability (Miller at al., 2003)

Session Rating Scale (SRS; Miller et al., 2002). The SRS is a 4-item measure that assesses key dimensions of the therapeutic relationship and is completed on a session by session basis. The dimensions are captured on four visual analogue scales and include measures of therapist respect and understanding, relevance of the goals and topics, client-practitioner fit and overall alliance. The SRS demonstrates high reliability and adequate validity (Duncan et al., 2003).

Adolescent Evaluation Form

In addition to the standardised measures, quantitative feedback was gathered on an evaluation form (see *Appendix J*). Participants were asked to rate how much they enjoyed the programme and how helpful it was on a 4-point Likert scale, from 0 'Not at all', 1 'Not really', 2 'Kind of', 3 'Very' and 4 'Extremely.' They were asked to report if they would recommend it to a friend (Yes/No) and qualitative feedback in terms of perceived benefits and areas of improvement was also obtained.

Procedure

Ethical approval was obtained from the University of Bath Ethics Committee (Approval Reference: 14-201), Wales NHS Research Ethics Committee (IRAS Project ID: 162440) and local Research and Development department. Participants were recruited from a local Tier 3 CAMHS and had been placed on a waiting list for individual CBT following an initial assessment meeting with a CAMHS clinician. The local collaborator contacted participants in order of their length of wait for CBT,

to inform them of the study and ask for their consent for the researcher to contact them by telephone. Those who gave permission were contacted by the researcher and invited to take part in the study. If the participant or parent agreed to take part, an appointment letter, information sheet and consent form (see *Appendices K, L and M),* along with six outcome measures were sent out the same day. If the participant declined, they remained on the waiting list and were not contacted again.

The first six participants that agreed to take part in the study were allocated to the 'Immediate cCBT' group and the remainder of the participants were allocated to the 'Delayed cCBT' group. The Immediate cCBT group were offered study timeslots immediately and the Delayed cCBT group were offered timeslots that were scheduled for approximately seven weeks after questionnaires were completed. The Delayed group completed questionnaires whilst waiting for treatment, which they received in the post in a stamped addressed envelope and were asked to return them immediately. Reminders to complete the measures were sent via email. Prior to completing the study, all participants were required to provide written consent to take part in the research and outcome measures were completed at the beginning of Session 1 and the end of Session 7. Participants then completed seven hour-long sessions of "Pesky gNATs," accompanied by the researcher. Fidelity to the treatment model was ensured through the provision of weekly CBT supervision from a supervisor accredited by the British Association for Behaviour and Cognitive Psychotherapies (BABCP).

Data analysis

The amount of missing data was screened and of 11 participants, two participants had two items from the RCADS-P missing each, which was corrected for by pro-rating the existing data. One participant had half of both the pre- and post-intervention SQC missing and therefore this participant was excluded from the analysis on the SQC. Also, for the purposes of the study, the SRS was used clinically to monitor therapeutic relationship and was not included in the analysis.

Firstly, participant participation and retention rates were calculated to investigate the feasibility of delivering the intervention in the Tier 3 setting. This involved calculating the number of participants who initially agreed to take part in the study, those who entered the study and those who completed. The qualitative data was then

analysed using the six step method of thematic analysis as described by Braun and Clarke (2006). This involved collating all participant responses under the categories of 'helpful' and 'unhelpful' aspects of the intervention and extracting codes from the data. Codes were then grouped by several overarching themes which were named and the number of participants reporting information relating to each theme was calculated.

Finally, the quantitative data was analysed. Although the original intention was to analyse the data using parametric testing (within and between-subjects t-tests), data did not meet the criteria for this and non-parametric methods were used. The first step of the data analytic strategy was to conduct a series of between-subjects Mann-Whitney U tests (2-independent samples) to compare the Immediate cCBT group (treatment) and the Delayed cCBT group (wait-list control) over the seven week period. The mean pre- and post- intervention changes in the primary variable (RCADS total anxiety and depression), secondary variable (SDQ Impact) and tertiary outcome variable (SQC) were compared between the groups. The remaining data was then analysed using the same between-subjects method. Next, the data was pooled and analysed using within-subjects analyses. Wilcoxon Signed-Rank Tests were conducted to identify changes in pre-and post-intervention scores for all participants for the primary, secondary and tertiary variables. The remaining data was then analysed using the same within-subjects method.

Results

Participant completion rates and characteristics

In total, 11 participants took part in the study and this represented 85% of those who expressed an initial interest to take part in the research, demonstrating a high recruitment rate. The retention rate was also good with participants attending all sessions and everyone completing treatment. All participants were of White British ethnicity and less than half (45%) lived in a two-parent family with both biological parents. Median ages, gender and primary reason for referral can be found in Table 2.

Table 2. Participant demographics

Demographic	Immediate cCBT (n=6)	Delayed cCBT (n=5)	Total (n=11)
Age Median (range)	14.5 (3)	15 (2)	15 (3)
Gender (females: males)	4:2	3:2	7:4
Primary reason for referral			
Depression	1	0	1
Anxiety	1	0	1
Mixed anxiety and depression	4	5	9
Prescribed psychotropic medication	1	0	1
Mean pre-intervention RCADS anxiety and depression score (standard deviation)	93.7 (31.9)	79.2 (20.9)	87.1 (27.2)

Acceptability of programme

Young people's feedback on their experience of the intervention was largely positive and 81% (9/11) said they would recommend the game to a friend. Participants' ratings of the programme in terms of how enjoyable and how helpful it was can be found in Figures 2 and 3. Although generally participants found the programme enjoyable, it seemed that the young people found it very helpful.

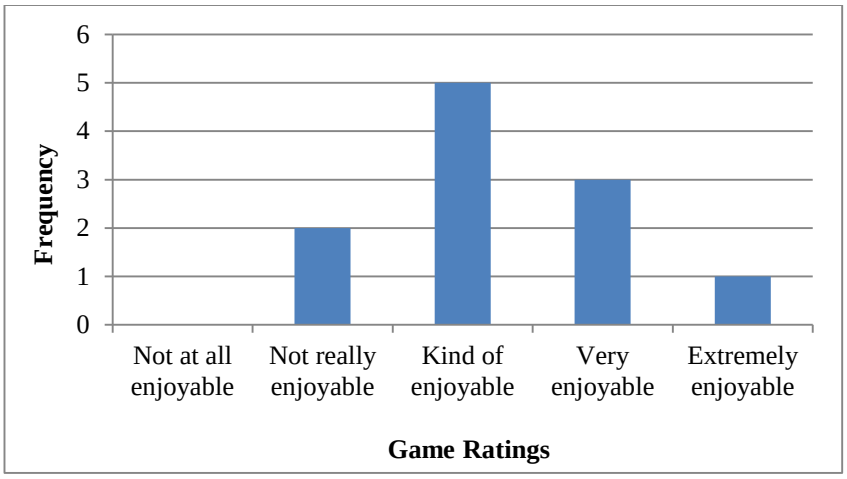

Figure 2. Participant ratings of intervention enjoyableness

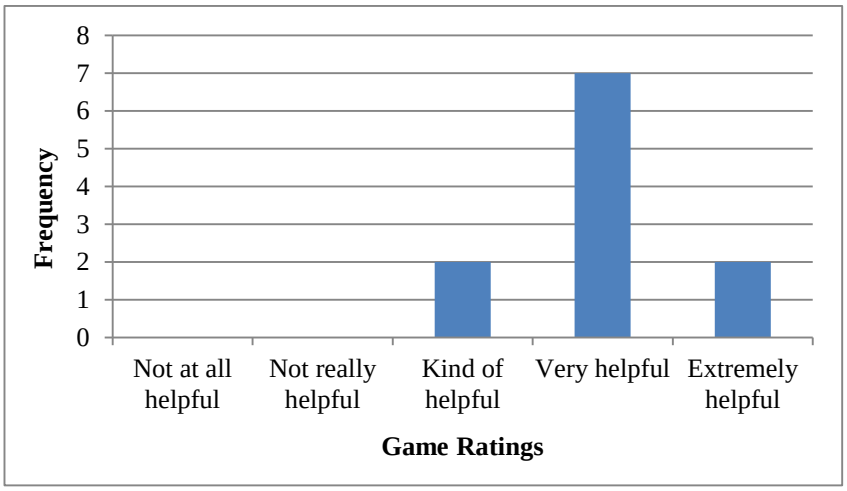

Figure 3. Participant ratings of intervention helpfulness

Qualitative feedback

The qualitative data obtained from verbal feedback based on the questions from the feedback sheet given at the end of the intervention was analysed. Firstly, all data was pooled together under the headings of 'benefits' and 'areas for improvement.' From this, codes were derived by extracting similar concepts and grouping them together. Next, names for the overarching themes were generated and then data was re-visited to ensure that all relevant codes were captured by these themes. The main themes and examples are presented in Tables 3 and 4.

Table 3. Perceived benefits of using the Pesky gNATs cCBT programme

Benefits	Examples
Gaining skills of negative thought recognition and relaxation (n=8)	*"Given me relaxation strategies which helped me to relax"* *"Beach dude breathing and relaxation skills helpful"* "*It kind of made me think about my thinking which helped"* "*Know what thoughts you are having and identify your core beliefs."*
Benefits of using a computer to deliver intervention (n=7)	*"Always hated therapy but this would be my style of doing it"* *"Fun to do it on a computer, more enjoyable than doing it on paper"* *"Was good doing it on a computer – don't like talking much, it was a back-up if you didn't want to talk, you could look at the computer"* *"Preferred to do computer as giving you something else to concentrate on – doesn't seem as full on as talking face to face"*
Game was relaxed and fun (n=5)	*"Relaxed, not always thinking, just listening and taking it on"* *"Get to relax"* *"Game was funny"*
Feeling understood (n=2)	*"Know that people understand"* *"Put my mind at rest about the thoughts, that it's ok to have negative automatic thoughts"*

Participants reported several benefits of the programme in terms of the skills they had gained but also in terms of the usefulness of using a computerised CBT intervention, compared with traditional CBT. Participants also reported positive experiences of using the game, saying that they were able to have fun and feel relaxed when completing the programme, as well as feeling understood. However, increasing the age-appropriateness of the programme was also highlighted and some young people felt that the game was more appropriate for younger adolescents. Making the programme simpler was also suggested and some young people felt that there was not enough room for talking. The disadvantage of using the programme as a standalone intervention was also raised, as young people thought that it could be difficult moving on to individual CBT with a new therapist and having to start the process again.

Table 4. Perceived areas of improvement for the Pesky Gnats cCBT programme

Areas for Improvement	Examples
Using less information and making game simpler (n=6)	*"Some of it has got lots of writing – could summarise those bits"*
	"More brief descriptions to give more room for talking"
	"If we were going to do activities could have done them without walking, meeting people etc. Takes ages to get anywhere"
Increasing age-appropriateness (n=4)	*"It may be for 13/14 year olds or younger children rather than 15 year olds"*
	"Make it a bit more grown up"
Difficulty of short-term work (n=3)	*"Could be a bit frustrating going back (to therapy) and re-starting the whole process and regurgitating everything again to someone else"*
	"Would like to stay on the game for longer"

Quantitative results

Between-groups analysis

A comparison of scores before and after the seven week period, during which the Immediate treatment group were receiving treatment and the Delayed group were waiting for treatment, were conducted for the Immediate cCBT (treatment) and Delayed cCBT group (control). Between-group comparisons were conducted for the primary outcome variable (total depression and anxiety symptoms), the secondary variable (SDQ Impact scores) and tertiary variable (SQC) (see Table 5). No significant differences between the Immediate and Delayed cCBT groups were found for changes in total depression and anxiety symptoms, level of functioning or adolescent beliefs about themselves across the intervention.

The secondary data was analysed and between-subjects comparisons were conducted for parent-rated symptoms (RCADS-P and SDQ-P), self-esteem (RSEI) and self-reported functioning (ORS). No significant differences were found between the Immediate and Delayed group for changes in pre- and post- intervention scores on any measure.

Table 5. Median (range) summary of between-subjects data analysis

	Immediate cCBT (n=6)		**Delayed cCBT (n=5)**		**Difference**
Measurement	*Pre*	*Post*	*Pre*	*Post*	
Total anxiety and depression (RCADS)	95.0 (87.0)	95.5 (62.0)	86.0 (48.0)	92.0 (48.0)	$U = 7.50$, $p = 0.34$
Level of functioning (SDQ Impact)	7.0 (4.0)	4.5 (6.0)	5.0 (6.0)	2.0 (5.0)	$U = 8.0$, $p = 0.41$
Self-concept (SQC)*	81.0 (41.0)	69.0 (52.0)	79.0 (29.0)	78.5 (57.0)	$U = 5.5$, $p = 1.63$
Parent reported total anxiety and depression (RCADS-P)	70.5 (69.0)	57.0 (28.0)	55.0 (59.0)	35.0 (65.0)	$U = 8.0$, $p = 0.42$
Parent reported total difficulties (SDQ-P)	22.0 (27.0)	14.5 (20.0)	13.0 (21.0)	13.0 (13.0)	$U = 5.0$, $p = 0.13$
Self-esteem (RSEI)	29.5 (12)	29.5 (14.0)	31.0 (10.0)	28.0 (8.0)	$U = 7.0$, $p = 0.28$

**Intervention group (n=4) due to missing data*

Within-groups analysis

As a secondary analysis, the effectiveness of intervention was evaluated for all 11 participants. A within-groups analysis for all participants was conducted to compare pre- and post- intervention scores for the primary, secondary and tertiary variables (see Table 6). It was found that there was no significant difference in total anxiety and depression symptoms (RCADS), levels of functioning (SDQ Impact) or adolescent beliefs about themselves (SQC) between the two time points.

Other data were analysed and comparisons of pre- and post- scores on the RCADS-P, SDQ-P, RSEI and ORS Total were calculated for all participants on a *post-hoc* basis. It was found that there was no significant within-subjects change in self-esteem across time. However, it was found that the intervention significantly decreased parent-rated total anxiety and depression scores on the RCADS-P and this was also true for parent-rated total difficulties on the SDQ-P. Also, adolescent rated perceptions of overall functioning on the ORS had significantly improved over the course of the intervention.

Table 6. Summary of within-subjects data analysis

	Pre-intervention (n=11) Median (range)	**Post- intervention (n=11)** Median (range)	**Difference**
Total anxiety and depression (RCADS)	86.0 (87.0)	94.0 (62.0)	Z = -1.15, p = 0.25
Level of functioning (SDQ Impact)	6.5 (7.0)	3.0 (6.0)	Z = -1.93, p = 0.54
Self-concept (SQC)+	80.0 (41.0)	69.0 (57.0)	Z = -0.58, p = 0.56
Parent reported total anxiety and depression (RCADS-P)	58.0 (74.0)	49.0 (65.0)	Z = -2.31, p = 0.02*
Parent reported total difficulties (SDQ-P)	22.0 (27.0)	13.0 (25.0)	Z = -2.35, p = 0.02*
Self-esteem (RSEI)	31.0 (15.0)	29.0 (14.0)	Z = 0.00, p = 1.00
Self-reported functioning (ORS Overall)	4.6 (5.6)	5.8 (5.9)	Z = -2.67, p = 0.01**

*+ n=10 due to missing data * p< 0.05 ** p< 0.01*

Discussion

This study was a preliminary investigation of the feasibility of using a novel computerised CBT programme for adolescents with depression and anxiety aged between 13 and 18 years of age. It was designed test the impact and acceptability of using cCBT in a Tier 3 CAMHS setting. Given that this was the first evaluation of a novel intervention, the study was designed in accordance with the MRC framework for developing and evaluating complex interventions (2008) by primarily assessing the feasibility and acceptability of the programme.

Firstly, results showed that Pesky gNATs was a feasible intervention for young people in a Tier 3 CAMHS setting, with participants demonstrating high participation and retention rates. Secondly, participants generally reported a high level of satisfaction with the game and it seemed that it was an acceptable method of delivering therapy for young people. Participants described several benefits of completing the cCBT intervention, such as learning skills and having fun. Also, participants generally found the intervention more helpful than enjoyable, suggesting

some scope for improving the enjoyment of the intervention, whilst retaining its helpfulness. A high level of satisfaction with cCBT has been reported previously for young people (Coyle, McGlade, Doherty, & O'Reilly, 2011; Stallard et al., 2011) and the frequent use of electronic media in young people may increase the attractiveness of using computerised therapies (Lenhart, Purcell, Smith, & Zickuhr, 2010). Yet, feedback from young people should be treated with caution, as participants in this study reported finding the intervention helpful, without showing significant decreases in anxiety and depression. Therefore, further mixed method evaluations are likely to be useful to disentangle the factors of perceived and objective benefit.

The areas for improvement were also highlighted and included using less information, increasing age-appropriateness and finding the short-term nature of the intervention difficult. The problem of cCBT being very brief and time-limited as an intervention has also been raised by clinicians (Stallard, Richardson, & Velleman, 2010). This suggests that it would be unhelpful to administer the programme as an intervention prior to the delivery of CBT, due to the disruption of changing intervention method and therapist. However, providing the least restrictive but most beneficial treatment first is in accordance with the principles of stepped care (Bower & Gilbody, 2005) and it is possible that some young people may benefit from being offered cCBT first or as part of a wider treatment package, rather than receiving more intensive CBT as the default.

Finally, the replication of the study by Stallard and others found little evidence of differences between the intervention and control group in the amount of change on self-reported overall symptoms of anxiety and depression, levels of functioning and adolescent views of themselves. Furthermore, other between-group analyses did not find differences between the intervention and control group in changes in self-esteem and parent-reports of anxiety, depression and overall difficulties. This result is in contrast with other studies that have found significant decreases in anxiety and depression using cCBT interventions designed to target both (Calear et al., 2009; Ellis et al., 2011; Sethi et al., 2010; Stallard et al., 2011). However, all studies except the research by Stallard and others used samples of young people who were at high risk of anxiety or depression, rather than those who had clinically significant symptoms, as well as having much larger sample sizes. In addition, these other

programmes have included modules such as assertiveness and self-esteem training, whereas "Pesky gNATs" primarily focused on cognitive restructuring and relaxation.

In a post-hoc analysis, there was some evidence of within-subjects reductions in parent-rated total anxiety and depression symptoms, as well as improvements in self-rated overall functioning. This is consistent with the one previous study that used cCBT with clinically depressed and anxious young people, who also found parent-reported decreases in total difficulties (Stallard et al., 2011). However, research had shown large discrepancies between parent and child reports of young people's affective symptoms (McConaughty, Stanger, & Achenbach, 1992), meaning that parents may not always be reliable informants of child symptomology. Also without significant differences in self-reported pre- and post- intervention comparisons, it is possible that the reductions in parent-reported symptoms may have been due to spontaneous recovery or high parental expectations for improvement.

Limitations

The study used a very small sample size which was sufficient as a preliminary pilot study of a novel intervention to investigate feasibility and acceptability, but greatly limited the conclusions that could be drawn about whether the intervention reduced symptoms of anxiety and depression. In the absence of adequate power determined by a power calculation, it is unknown as to whether the null findings were due to inadequate power or whether they indicated that the intervention does not reduce symptoms of anxiety or depression. Also, the sample included young people who were moderate to severe in terms of the impact of their emotional difficulties reaching the threshold for Tier 3 CAMHS services and therefore only represents a small proportion of those who may experience anxiety and depression. Furthermore, as not all participants' initial symptom scores fell above clinical cut off, it is difficult to conclude the application of "Pesky gNATs" to other young people scoring in more severe ranges of self-reported symptoms. Finally, there was an absence of follow-up data which meant that the longer term effects of the intervention were unknown.

Clinical implications and future directions

The main clinical implication of this study is that "Pesky gNATS" is an acceptable and feasible intervention. It may not be effective as a standalone psychological intervention for adolescents with clinically significant levels of anxiety and depression yet in the absence of adequate sample sizes, this is difficult to determine from the current study. Although general satisfaction was high, it could be that cCBT is more suitable for Tier 1 and 2 settings, as demonstrated in previous research. This also fits with clinician views that cCBT may be less useful as an intervention for young people with more severe difficulties, but rather as a method of prevention or for those with mild/moderate symptoms (Stallard et al., 2010). It is clear that further research using larger sample sizes in other Tier 3 settings is needed, in order to establish the appropriateness of using this intervention for young people with severe and complex difficulties.

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Executive Summary

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Executive Summary

Introduction

Some studies have found that Cognitive Behavioural Therapy (CBT), a talking therapy looking at thoughts and feelings, is effective at reducing symptoms of anxiety and depression with children and adolescents. However, young people may not wish to have psychological therapy, as they may feel embarrassed and self-conscious which can prevent them from wanting to access services. The development of CBT delivered through a computer or "computerised CBT" (cCBT) has been suggested as one way of making psychological therapy more appealing to young people to improve their engagement. Many studies have found that cCBT can be helpful for young people with low levels of anxiety and depression. Yet, it is not known whether cCBT programmes are helpful for adolescents with high levels of anxiety and depression, meaning that more research is needed. This study aimed to look at whether a new cCBT programme called "Pesky gNATs" was helpful for reducing anxiety and depression with adolescents aged between 13 and 18 who were accessing community Child and Adolescent Mental Health Services (CAMHS).

The "Pesky gNATs" computer game is played by the young person with support from a mental health professional and the game involves the young person exploring a tropical island using a fictional character. A metaphor is used during the game to make CBT concepts more accessible to young people. 'Negative automatic thoughts' are presented as little creatures called 'gNATs' that can sting people, 'thought recording' becomes gNAT trapping, 'thought challenging' becomes gNAT swatting and 'core beliefs' are explained as the hives where gNATs come from.

Method

Eleven participants with anxiety and/or depression who were on the waiting list for CBT in a community CAMHS service were recruited. Half of the participants were offered "Pesky gNATs" straight away (immediate group) and the rest had to wait seven weeks to start "Pesky gNATs" (delayed group). Participants in the 'immediate group' completed seven weekly hour-long sessions of "Pesky gNATs" and

completed questionnaires before the intervention started and after it had finished. Those in the 'delayed group' completed questionnaires at the start of their seven week waiting period, at the end of the seven week period (before they started the intervention) and after the intervention.

Young people were asked to complete four questionnaires measuring symptoms of anxiety and depression (Revised Child Anxiety and Depression Scale; RCADS), negative beliefs about themselves (Child Schema Questionnaire; CSQ), the impact of their difficulties in general functioning with school, home and friendships (Strengths and Difficulties Questionnaire; SDQ) and self-esteem (Rosenberg's Self Esteem Inventory). Also, their parents were asked to complete two questionnaires measuring symptoms of depression and anxiety (RCADS Parent Version; RCADS-P) and general functioning (SDQ Parent Version; SDQ-P). In addition, participants completed session-by-session ratings of their general functioning using the Outcome Rating Scale (ORS). Finally, adolescents were also asked to give feedback on their experience of using cCBT after the intervention.

Results

Adolescent feedback indicated some satisfaction with the game and most reported that it was helpful. Participants fed back several benefits of completing the cCBT intervention, such as learning how to recognise and change negative thoughts, feeling understood, having fun and using the computer as a visual aid. However, some participants said that completing cCBT whilst waiting for individual CBT might be difficult because they would have to see someone else after the programme. They also thought that the programme could be made to be more age-appropriate and could include less information, so there was more room for talking.

There were no significant changes in adolescent-reported symptoms of anxiety and depression, the impact of their difficulties on functioning or beliefs about themselves were found between the intervention and control groups. However, parents reported a significant reduction in overall symptoms of anxiety and depression and total emotional difficulties over the course of the intervention. Also, adolescent session-by-session reports of their general functioning significantly increased over the course of the intervention.

Conclusion

This study found some evidence for the usefulness of using a cCBT programme in community CAMHS setting, although the low numbers of participants limits the conclusions that can be made. The findings suggest that cCBT may not be suitable as an intervention on its own for adolescents with high levels of anxiety and depression and may be more useful for young people with milder symptoms of anxiety and depression. Further research using more participants in other community CAMHS settings is needed to find out whether "Pesky gNATs" is effective in reducing symptoms of anxiety and depression and improving general functioning for young people.

Connecting Narrative

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Connecting Narrative

Introduction

The connecting narrative describes a reflective account of the process of the design, procedure and applications of the three main research projects. A broad connecting theme uniting the main research project and critical literature review was the focus on mental health difficulties across childhood and adolescence, with the former investigating the treatment of depression and anxiety and the latter looking at how family factors may contribute to the development of depression. The service improvement project also had a systemic focus, exploring the subjective view of relatives of individuals with an acquired brain injury and how psychological input may be beneficial.

Main Research Project

Study Design and Development

During the first and second year of training, I had developed a main research project and gained full NHS ethical approval through the Integrated Research Applications System (IRAS), as well as University ethical approval for the study to be conducted in forensic services. Unfortunately, due to a large scale service redesign and job reallocations that had directly affected my field supervisor, this project fell through at the end of the summer of second year. It was at this point that I had very little time (less than 2 months) to create a new project, find a new supervisor and get full ethical approval through IRAS. Therefore the process of research and number of participants recruited was heavily influenced by the limited timescale. Also, my new project involved testing a novel intervention, which meant that each participant required at least seven hours of contact time and the research locations were far from the University base, therefore limiting the number of participants recruited during this time.

Around the time of planning and designing a new study, I recalled having several discussions with clinical supervisor whilst on my CAMHS placement about long waiting lists and the need for short term skills-based interventions that young people can take away and apply before accessing more intensive interventions. During my

CAMHS placement, I had used a computerised CBT (cCBT) programme designed for children aged 9 to 13 years of age and remembered wondering about how the programme had been developed and evaluated. Therefore, I contacted the author of the programme, Dr Gary O'Reilly working at University College Dublin to inquire about research opportunities. At this stage, he informed me of new adolescent version of the programme which was yet to be evaluated and agreed that I could conduct a pilot study on this. As part of the research development, I organised a training event for the CAMHS team and individuals from the Bath DClinPsy programme where Gary came to Bristol and gave training on the programme. When I was designing the project, I gained service user feedback by inviting two CAMHS service users and their parents to review the Participant Information Sheet and Consent Forms and provide their opinion. This feedback was then incorporated into the final versions of the materials.

Ethical Approval

Ethical approval was gained from the NHS through IRAS application and panel interview, and also from the University of Bath Ethics Committee and the Weston Area Health NHS Trust Research and Development team. I had to apply to collect data from two sites and therefore had to liaise with the CAMHS team in both locations.

Recruitment

Obtaining participants involved my clinical supervisor initially contacting participants on the waiting list for individual CBT and asking them if they would like to take part in the study whilst waiting. The intervention was offered first to those participants who had waited the longest and those who met the inclusion criteria. Once participants had verbally consented to take part in the study and agreed to be contacted, I then contacted them and arranged clinic times and dates.

Data Collection

Data collection involved asking participants to complete questionnaires prior to the intervention and after. Follow up data was also collected in terms of questionnaires and number of those who were discharged following the intervention. The intervention itself consisted of 7 hours of individual cCBT which I facilitated under the supervision of my clinical and research supervisors.

Challenges and Personal Reflections

One of the biggest challenges of the main project process, apart from having to start another one again at the end of second year, was the amount of input required for each participant. The testing locations were far from where I lived at the time of testing and I had to make time to see participants whilst completing a clinical placement which was split across two teams. Therefore, essentially I had a clinical caseload across three different teams and three different locations which made it very stressful. Also, the partial clinical responsibility of each participant meant that at times, I had several other tasks to complete other than delivering the intervention. For example, I had to organise discharge procedures, and was involved with safeguarding procedures, school liaison and information sharing with the rest of the team.

Also, as a clinician it was challenging to administer the programme when participants had a tendency to deviate from the programme. It required clinical judgement to balance how much time should have been spent on the programme and how much time spent on allowing participants to tell their story or give me an update on their week. Seeing the benefits of the programme that were not reflected in the questionnaires also made me think more about the limitations of using symptom based outcome measures and how many other factors can contribute to symptom scores, other than the clinical intervention.

However, the project enabled me to gain experience administering a clinical intervention as part of a research project and allowed me to reflect on how this is different to working clinically. I received weekly CBT supervision from one of my research supervisors (ML) which allowed me to ensure fidelity to the treatment model and helped me overcome barriers to engagement or adherence to the intervention. Additional supervision from both university supervisors (PS and ML) was used to problem solve practical difficulties with the research, gain support with the analysis of results and guide me through the write up. Monthly supervision was obtained from the regional supervisor (MP) to feed back any service related issues and additional ad hoc supervision from this supervisor was sought in the event of important and immediate clinical advice, such as safeguarding issues.

Contribution to Clinical Practice

The research has demonstrated how young people can benefit from using a cCBT intervention whilst waiting for individual CBT but how it may not be sufficient as a standalone treatment. It also highlighted that cCBT may be useful as an introduction to CBT principles but may not be suitable for young people with more complex presentations.

Service Improvement Project

Study Design and Development

The need for the service improvement project was highlighted through conversations with the regional supervisor, following a period of poor attendance at the relatives group for individuals with acquired brain injury (ABI). It was decided that both quantitative and qualitative feedback would most useful to the facilitators of the group and therefore each element was included in the design. The method sought to gather responses from all relatives attending the service, rather than simply those who attended the group, to highlight the barriers to group attendance, rather than simply gaining feedback on the group from those who were attending. The development of a questionnaire was thought to be the most effective way of gathering the views of many participants and it fit into the discharge procedure which meant that all participants who left the service were given the opportunity to complete the survey.

As part of the project design, I attended several meetings with the supervisor and another facilitator of the group to gain more information about the service need. I also spent two days at the service and attended one of the support groups to get more of an idea about how the service ran and the needs of the relatives.

Ethical Approval

Due to the project falling under the category of service evaluation, ethical approval was gained from the NHS North Bristol Audit Committee and the University of Bath Ethics Committee.

Recruitment and Data Collection

Recruitment of participants was fairly straightforward as all relatives leaving the service over a period of a year had the opportunity to complete the survey at their discharge meeting. The response rate was sufficient to give me enough information to analyse data and extract relevant themes. Although the feedback was collected in a questionnaire format, I was surprised how much people had written about their experience, particularly those who had attended the relatives group. Gathering qualitative data also gave me an opportunity to learn how to conduct a thematic analysis correctly and how to use independent raters to confirm themes.

Challenges and Personal Reflections

I found the process of this project fairly straightforward, probably because of the heavy investment of the stakeholders and the fact that both of them were Clinical Psychologists helped as they knew the scope and format of the project. Spending time at the service was also a really useful insight into a field of psychology that I was interested in and helped to understand more fully about the service design and client need.

Contribution to Clinical Practice

Dissemination of project results was achieved through discussions with the Psychologists involved in the group, rather than the rest of the Multi-disciplinary team. The project was useful to identify the barriers and benefits that family members may experience when attending support groups and highlights the undeniable value of sharing experiences with others who are adjusting to similar difficulties.

Critical Literature Review

Study Design and Development

The literature review topic was developed in collaboration with the academic supervisor, who provided advice about search strategy and the process of obtaining and organising information from individual articles. Due to the review being based on methodology, a broad thematic analysis was required to group articles together which was difficult at times, due to several cross cutting themes or multiple aspects

of the parent-child interaction included within the same journal article. Discussions took place early on about the decision to conduct the review in a narrative, rather than systematic format and a trial of each was conducted to explore which method yielded the most relevant information. The narrative method emerged as being the most successful and appropriate to the review question. Divergent methodologies and definitions also made it difficult to integrate and synthesise the data, but ongoing support from the supervisor facilitated this process. Conducting the literature review during training was particularly useful when working in CAMHS settings to reflect on the interpersonal parent-child dynamics that adolescents with depression encounter and my own responses to working clinically with young people who are depressed.

Challenges and Contribution to Clinical Practice

I found the review challenging to write as one of the inclusion criteria was based on methodology, meaning that the studies were mostly investigating parent-child interactions in relation to a variety of differing constructs, using different coding systems etc. Furthermore, the quantity of the studies made it difficult to describe the studies in any detail and provide full methodological critiques.

Appendices

Critical Literature Review

Appendix A. Table 1 - Summary of Observational Parent-Child Interaction Studies

Study	*N**	Age (years)	Design	Observational tasks and coding system	Parent/child variables of interest	Youth depression outcome
Allen et al. (2006)	143	13-14	Longitudinal: T1 and T2 1 year apart	PSI, ARCS coding	Adolescent autonomy undermining behaviour	CDI
Burge & Hammen (1991)	57	8-16	Longitudinal: T1 and T2 6 months apart	5 minute interaction task: conflict discussion, PIS coding	Maternal task involvement and negative/critical feedback	K-SADS
Corona et al. (2005)	111	Mean age = 13	Cross-sectional	PSI, positive and negative codes (no coding system specified)	Maternal criticism	CDI: Short form
Dadds et al. (1992)	73	14-17	Cross-sectional: Depressed (18), conduct disorder (27), mixed conduct disorder and depression (12) and controls (16)	Evening meal, FOS coding	Parent and child positive and adverse behaviours and affect expression	K-SADS: EV

Dietz et al. (2008)	112	8-17	Longitudinal: Depressed (43), high risk (28) and controls (41)	Conflict discussion, FIGCS coding	Maternal disengagement	KSADS:EV
Field et al. (1987)	56	4-8	Cross-sectional: Depressed (20), conduct disorder (18), controls (18)	Freeplay interaction, teaching task, solitary freeplay and child solitary puzzle completion task (no coding system specified)	Maternal responsiveness to child affect	DSM-III diagnosis by psychiatrist, CDI
Gate et al. (2013)	163	12-17	Longitudinal: T1, T2, T3 2 years between time points	IC, PSI, PES, EPI, LIFE coding	Maternal aggressive and positive behaviour and adolescent rumination	K-SADS-PL
Ge et al. 2004	406	9-20	Longitudinal: T1, T2, T3,T4 one year between time points	Discussion of positive and negative events, coded on 5 point scale ratings	Parental support (responsiveness, communication)	SCL-90
Gunlicks-Stoessel & Powers (2008)	80	14-18	Longitudinal: T1, T2, T3 one year between time points	IC, PSI, VR	Adolescent retrospective rating of positive and negative emotional experience during interaction	YSR
Hamilton et al. (1999)	59	7-14	Cross-sectional: Depressed (21), schizophrenia (18) and controls (20)	PSI, Affective Style and Coping Style coding	Parental criticism	K-SADS-E
Hofer et al. (2013)	131	13-15	Longitudinal: T1 and T2 2 years apart	IC, PSI, affect and verbal coding	Maternal positive affect and anger	CBCL

Hollenstein, Allen and Sheeber (2015)	84	14-18	Cross-sectional: Depressed (24) and controls (60)	EPI, PSI, FCI, LIFE coding	Affective matching between parents and adolescents	K-SADS
Jackson et al. 2011	96	14-16	Cross-sectional: Depressed (43), controls (53)	IC, PSI, LIFE coding	Parental and adolescent angry behaviour	K-SADS, CES-D
Jacob & Johnson (2001)	130	10-18	Cross-sectional	ACQ, PSI, MICS coding	Parental positivity and positivity suppression	CBCL
Jacobvitz et al.(2004)	108	24 months	Longitudinal: T1 and T2 5 years apart	Completing unrelated task whilst providing caregiving, codes derived using rating scales	Maternal disengagement and role confusion	CBCL
Kobak et al (1993)	48	14-18	Cross-sectional	PSI, codes derived using rating scales	Adolescent assertiveness	DDPA

Kuppens et al (2010)	141	Mean age = 16	Cross-sectional: Depressed (72) and controls (69)	EPI, PSI, discussion of family life, LIFE coding	Adolescent emotional inertia, angry, dysphoric, happy behaviour	CES-D
Kuppens et al (2012)	165	9-12	Longitudinal: T1 and T2 2.5 years apart	PSI, EPI, LIFE coding	Adolescent emotional inertia, angry, dysphoric, happy behaviour	K-SADS-PL, CES-D
Lewandowski & Palermo (2009)	30	11-16	Cross-sectional	IC, PSI, EPI, AIRS coding	Adolescent age appropriate independence and responsibility	RCADS
Messer & Gross (1995)	20	8-10	Cross-sectional: High depressive symptoms (10) and low depressive symptoms (10)	Home based observation, codes derived using rating scales	Parent and child positive reciprocal behaviour	CDI
Pavlidis & McCauley (2001)	60	10-17	Cross-sectional: Depressed (20), externalising problems (20) and controls (20)	IC, PSI, ARCS coding	Adolescent autonomy and relatedness	K-SADS, CBCL

Pineda et al. (2007)	72	14-18	Cross sectional: High depressive symptoms (39) and controls (33)	IC, PSI, no coding system specified	Maternal positive behaviour, and adolescent depressive behaviour	CDI
Powers et al. (2008)	78	14-17	Longitudinal : T1, T2 and T3, 1 year between time points	TC, PSI, VR	Adolescent submission	YSR
Sagrestano et al. (2003)	275	9-15	Longitudinal: T1 and T2 2 years apart	IC, PSI and unfamiliar board game task, codes derived using rating scales	Parent and child role negotiation	DICA - R
Sanders et al. (1992a)	73	7-14	Cross-sectional: Depressed (30), conduct disorder (27) and controls (16)	IC, PSI, DOS coding	Parent and child angry behaviour	K-SADS, CDI,
Schwartz et al. (2011)	159	11-13	Longitudinal: T1 and T2, 2-3 years apart	IC, PSI, PES, EPI, LIFE coding	Parental aggressive and dysphoric behaviour	K-SADS-PL

Schwartz et al. (2012)	194	10-12	Longitudinal: T1 and T2 2.5 years apart	PSI, PES, EPI, LIFE coding	Parental aggressive, dysphoric and positive behaviour	K-SADS, CES-D, BDI
Schwartz et al. (2014)	113	10-18	Longitudinal: T1, T2, T3, T4 2 years between time points	IC, PSI, PEC, EPI, LIFE coding	Reciprocal maternal and adolescent aggressive, dysphoric and positive behaviour	K-SADS-PL
Sheeber et al. (2000)	50	12-19	Cross sectional: Depressed (25) and controls (25)	IC, PSI, LIFE coding	Parent and adolescent depressive and aggressive reciprocal behaviour.	K-SADS
Sheeber et al. (1998)	494	14-18	Longitudinal: T1 and T2 one year apart Depressed (86) and controls (408)	IC, PSI, LIFE coding	Parent and adolescent depressive and aggressive behaviour	CBCL-D
Sheeber & Sorenson (1998)	52	12-19	Cross-sectional: Depressed (26) and controls (26)	IC, PSI, LIFE coding	Maternal aggressive behaviour	K-SADS

Sheeber et al. (2009)	152	14-18	Cross-sectional: Depressed (75) and controls (77)	Plan a vacation then reminisce about a fun time, conflict resolution and best and most difficult memories, LIFE coding	Adolescent angry and dysphoric behaviour	K-SADS, CES-D
Sheeber et al. (2007)	82	14-18	Cross-sectional: Depressed (82), sub-diagnostic depressive symptoms (78) and controls (83)	IC, PSI, LIFE coding	Parental aversive behaviour	K-SADS, CES-D
Sheeber et al. (2012)	141	14-18	Cross-sectional: Depressed (72) and controls (69)	Family activity task, conflict task, reminiscence task, LIFE coding	Adolescent angry and dysphoric behaviour	K-SADS. CES-D
Slesnick & Waldron (1997)	37	14-16	Cross-sectional: Depressed (17) and controls (20)	ACQ, PSI, LIFE coding	Parent and adolescent aversive content and affect, and depressive content and affect	CDISC
Tompson et al (2012)	130	9-16	Cross-sectional	PSI, LIFE coding	Maternal aversive behaviour	CDI

Yap, Allen & Ladouceur (2008)	200	11-13	Cross-sectional	IC, PSI, PEC, EPI, LIFE coding	Maternal and adolescent dysphoric and positive behaviour	CES-D-Revised
Yap et al (2010)	198	10-12	Cross-sectional	IC, PSI, PEC, EPI, LIFE coding	Maternal dysphoric and aversive behaviour, adolescent emotional regulation and aggressive behaviour	CES-D
Yap et al (2011)	163	11-13	Cross-sectional	EPI, PSI, LIFE coding	Maternal and adolescent aversive behaviour	CES-D

**N* includes all participants at follow up for longitudinal studies

ACQ = Areas of Change Questionnaire, ARCS = Autonomy and Relatedness Coding System BDI = Beck Depression Inventory, CBCL = Child Behaviour Checklist, CDI= Child Depression Inventory, CDISC = Computerised Diagnostic Interview Schedule for Children, DDPA = Dimensions of Depression Profile for Adolescents, DOS = Depression Observation Schedule, EPI = Event Planning Interaction, FCI = Family Consensus Interaction, FIGCS = Family Interaction Global Coding System, FOS = Family Observation Schedule, IC = Issues Checklist, ISCA = Interview Schedule for Children and Adolescents, K-SADS = Kiddie-Schedule for Affective Disorders and Schizophrenia, K-SADS:EV = Schedule for Affective Disorders and Schizophrenia: Epidemiological Version, K-SADS-PL: Schedule for Affective Disorders and Schizophrenia for School-age Children, Present and Lifetime version, LIFE = Living in Family Environments, MICS = Marital Interaction Coding System, PIS = Peer Interaction System, PES = Pleasant Events Schedule, PS = Problem Solving Interactions, TC = Topics Checklist, VR = Video Recall, YSR = Youth Self Report.

Appendix B. Table 2 - Commonly used Coding Systems for Observed Parent-Child Interactions

Coding System	Theme	Definition
Autonomy and Relatedness Coding System (ARCS)	*Exhibits autonomy*	States reasons clearly for disagreeing and shows confidence in stating thoughts and opinions
	Inhibits autonomy	Recants own position, over-personalises boundaries between person and position and pressures others to agree
	Exhibits relatedness	Queries of another person which are information seeking, validates other person and displays engagement in the interaction
	Inhibits relatedness	Distracts or ignores other person, hostile or devaluing statements towards other
Depression Observation Schedule (DOS)	*Positive solution*	Appropriate verbal problem solving behaviour consisting of either a positive constructive proposal for change or a compromise solution to the problem
	Aversive content	Criticism, negative solution, justification or disagreement
Family Interaction Global Coding System (FIGCS)	*Maternal positivity*	Assertiveness, communication, involvement and self-disclosure
	Maternal negativity	Anger/hostility, coercion and transactional conflict
	Maternal control	Authority, child monitoring and attempted parental influence

	Child positivity	Mature, respectful, cooperative behaviour
	Child negativity	Dysphoric, negative or unhappy in his or her statements
Family Observation Schedule (FOS)	*Child aversive*	Non-compliance, complaint, aversive demands, physical negative behaviour
	Parent-child aversive	Aversive contact, questions or social attention
	Parent-child positive	Praise, contact, questions or social attention
Living in Family Environments (LIFE)	*Aggressive behaviour*	Contemptuous, angry or belligerent affect and cruel, provocative, annoying, disruptive or argumentative statements made with neutral affect
	Aversive behaviour	Contemptuous, angry and belligerent affect, as well as disapproving, threatening or argumentative statements with neutral affect
	Dysphoric behaviour	Dysphoric, anxious or whining affect and complaints and self-derogatory verbal comments made with neutral affect
	Facilitative behaviour	Statements that conveyed approval or served to maintain the conversation, as well as statements said with happy or caring affect
	Positive behaviour	Happy, pleasant and caring affect and approving, validating, affectionate or humorous comments made with neutral affect
	Positive interpersonal behaviour	Happy, pleasant, caring and approving statements and behaviours that serve to maintain the conversation

Appendix C. Instructions for Authors: Journal of Family Theory and Review

The *Journal of Family Theory & Review* (*JFTR*) publishes original contributions in all areas of family theory, including advances in theory development, critical analyses and reviews of existing theory, new applications of theory, new interpretations of conceptual positions or concepts once thought to be distinct, essays in the conduct of theory construction, and analyses of the interface of theory and method. In addition, we are equally committed to publishing integrative reviews of existing research. Unlike many neighboring disciplines we have paired publishing integrative reviews with new developments in theory because they are so intimately tied together in the generation and interpretation of knowledge about families.

The overall design, method and focus of reviews can vary widely but generally takes one of several forms. Reviews can center on a particular question and critically evaluate the available evidence. Integrative reviews can develop new models for organizing and interpreting a literature, compare the application of several existing models, or assess the support for a particular theoretical model. In addition, reviews can direct future inquires by offering a critical analysis of a particular topic, evaluating the available evidence, the kinds of questions that are addressed or not addressed, the range of methods utilized, and the kinds of data generated. Whatever the purpose or method the most useful reviews are theory-based, well balanced, organized, comprehensive, critical, and written for a broad audience. The most useful reviews advance understanding rather than reiterate what is already known. Comprehensive work that provides a historical review of theory development or a historical review of a particular research area is only appropriate to the extent that the work presents new knowledge, or a new understanding of existing knowledge.

The architectural themes underlying our mission are rooted in a firm commitment to developing the field of family studies with innovations in theory and critical reviews leading to the integration and full development of a cumulative knowledge base. This architecture also permits an opportunity for innovation in creating new methods for developing theory, as well as new methods for directing the conduct of literature reviews. The journal welcomes publishing advances in the methods of theory development, as well as advances in the methods for conducting integrative

reviews. Although we wish to encourage meta-analyses where appropriate, for some purposes empirically based meta-analyses are ineffective.

Narrative reviews, or what are often called systematic reviews, are particularly useful when the interest is in critically evaluating a research literature and especially from the viewpoint of one or more theoretical positions, as well as in cases where diverse methods are applied or where changes in methods have occurred over time. In either the case of an empirically based review or a narrative review, two essentials are important. Reviews should have a strong conceptual basis and aim to advance theory, and secondly reviews should be based upon a systematic analysis and clear statement of method (e.g., how articles for review were selected). The journal welcomes publishing innovations in the development of the methods for conducting reviews as well as pedagogical contributions that describe best practices in the reporting of reviews.

Potential authors are encouraged to contact the editor with any questions regarding the development of potential contributions. *JFTR* considers book reviews as an important part of our mission. Authors who wish to have their books reviewed, or those who wish to write a review are encouraged to contact the book review editor. Manuscripts should be submitted online at http://mc.manuscriptcentral.com/jftr. Full instructions and support are available on the site and a user ID and password can be obtained on the first visit.

Appendix D. Relatives Group Outline

Topic	Content
1. Rehabilitation after brain injury	This is an introduction to the various types of brain injury presented at the BIRU; the various brain regions and how people can be affected if these regions are damaged; what the difference between recovery and rehabilitation is; and a brief overview of some of the cognitive strategies that can be used.
2. Looking after yourself whilst supporting your loved one	This starts with a brief overview of the different challenges and stresses that relatives face during each stage of the patients journey, starting with intensive care through to BIRU and then at the end of the session, thinking to the future. The main part of the session encourages discussion between relatives on the importance of looking after themselves during this time; the signs of carer burnout; and what things they have found helpful. It is an opportunity for relatives to voice some of the feelings that they don't always feel able to say to the patient or other friends and family. The manager of Headway also attends to discuss what support is available to carers both now and in the long term.
3. Emotions following brain injury	This starts with a brief look at how thoughts, feelings and behaviours all interact and affect each other. It then goes on to look at the research into how emotions can be felt and expressed differently after a brain injury, and what relatives might expect from their loved one's behaviour. It then briefly looks at the dysexecutive syndrome as well. Finally, a discussion takes place of how the relatives' emotions have been affected by what has happened also, and then summarise at the end.
4. Brain Injury - what happens in the long term	The final presentation looks at the literature on how people are coping several years after their injury and things like living independently, returning to work and relationships are discussed

Appendix E. Questionnaire for Relatives

Please complete the following questions about your experience of the relative support group provided by the Brain Injury Rehabilitation Unit. The questionnaire should take no longer than 10 minutes and you may omit any questions that you do not wish to answer.

1. How long has your relative been a patient at the unit?

    a. Less than one month
    b. One month
    c. Two months
    d. Three months
    e. Three or more months

2. Have you attended the relative support group? Yes/No
   If no, what were the reasons for this? (Please skip to question 11)

3. How did you first hear about the relative support group?

4. How much information did you receive about the group?

5. How many support groups have you attended?

6. How well do you think the support group meets your needs as a relative?

Poor	*Less than satisfactory*	*Satisfactory*	*Good*	*Excellent*
1	2	3	4	5

7. What have been the most useful aspects of the group?

8. What have been the least useful aspects of the group?

9. How do you feel the group could be improved?

10. Would you recommend the group to other patients or relatives? Yes/No

11. Were there any barriers to attending the support group e.g. practical or emotional?

Thank you for your time

Appendix F. Participant Information Sheet and Consent Form

Developing a support group for relatives of individuals with an acquired brain injury

You are being invited to take part in a study, which will take between 5 and 10 minutes to complete. Before you decide it is important for you to understand why the study is being done and what it will involve. Please take time to read the following information carefully and discuss it with others if you wish. You may choose to complete this questionnaire in your own time and feel free to ask us if there is anything that is not clear or if you would like more information.

The purpose of the study is to find out whether the current relative support group is meeting the needs of family members of those at the service and if any changes can be made to accommodate feedback from those who attend the group. The study will take place between September 2013 and April 2015.

You have been asked to take part regardless of whether you have attended the support group, to gain the views of all relatives and to find out if there were any barriers to attending the group. However, it is up to you to decide whether or not to take part. If you do decide to take part you will be given this information sheet to keep and be asked to sign a consent form. If you decide to take part you are still free to withdraw at any time and without giving a reason.

If you agree to take part, you will be asked to fill in a questionnaire about your experience of the group so far, whether your current needs are being met and whether you have any suggestions for how the group may be improved. All information which is collected about you during the course of the study will be kept strictly confidential. Any information about you that leaves the unit will have your name removed so that you cannot be recognised from it. The results of the study may be written up for publication, but your information will not be identifiable. You will be given the choice to receive a copy of this document before it is disseminated and asked to make any comments or suggestions, as appropriate.

The study is being conducted by a Clinical Psychologist in Training from the University of Bath in conjunction with the Clinical Psychology team at the Rehabilitation Unit. It has gained approval from both the NHS Audit Committee and the University of Bath Ethics Committee.

If you would like to be informed of any relevant changes that have been made to the group following your suggestions and would like to provide feedback on the written results of the study, please leave your contact details below:

If you have any questions or wish to opt out of being contacted at a later date, please feel free to contact me or the service Neuropsychologist:

Rosanna Chapman (Clinical Psychologist in Training)
Email: r.chapman@bath.ac.uk

Thank you for taking part in this study.

Participant Identification Number for the study:

Title of Project: A study to evaluate and develop a support group for relatives of individuals with an acquired brain injury

Name of Researcher: Rosanna Chapman
Clinical Psychologist in Training,
University of Bath

Please initial box

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions. ☐

2. I understand that my participation is voluntary and that I am free to withdraw at any time, without giving any reason, without my medical care or legal rights being affected. ☐

3. I agree to take part in the study. ☐

_____	_____	_____
Name of Participant	Signature	Date
_____	_____	_____
Researcher	Signature	Date

Appendix G. Thematic Analysis Process

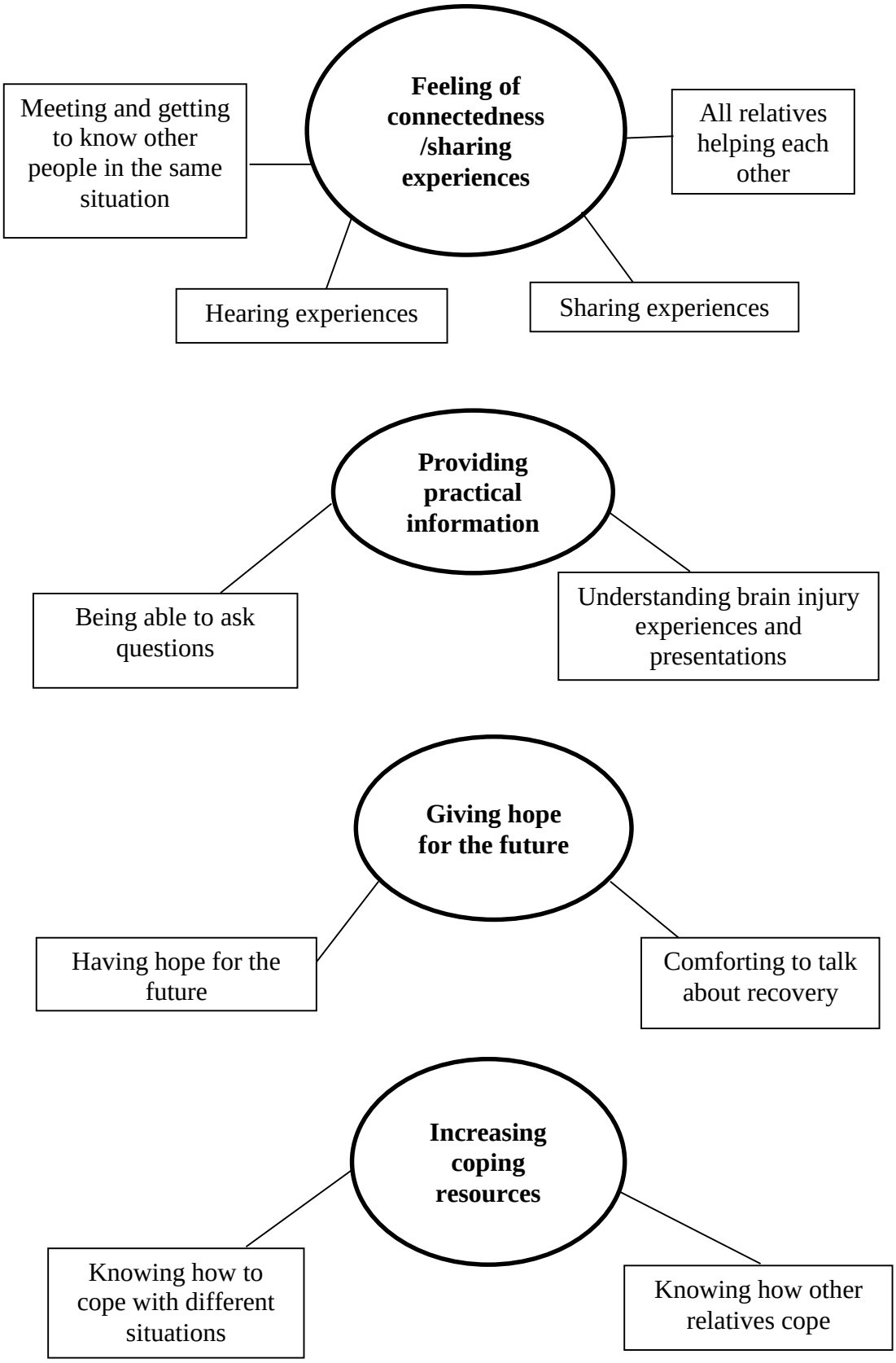

Figure 1. Initial thematic map of beneficial aspects of group attendance, showing 4 main themes

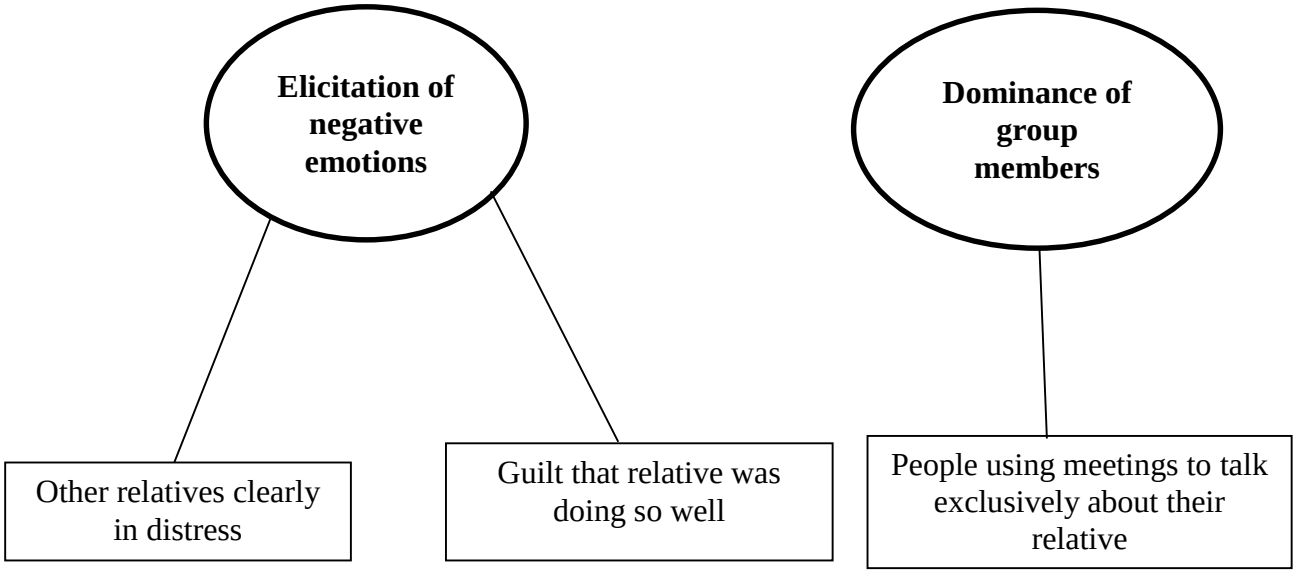

Figure 2. Initial thematic map of unhelpful aspects of group attendance, showing 2 main themes

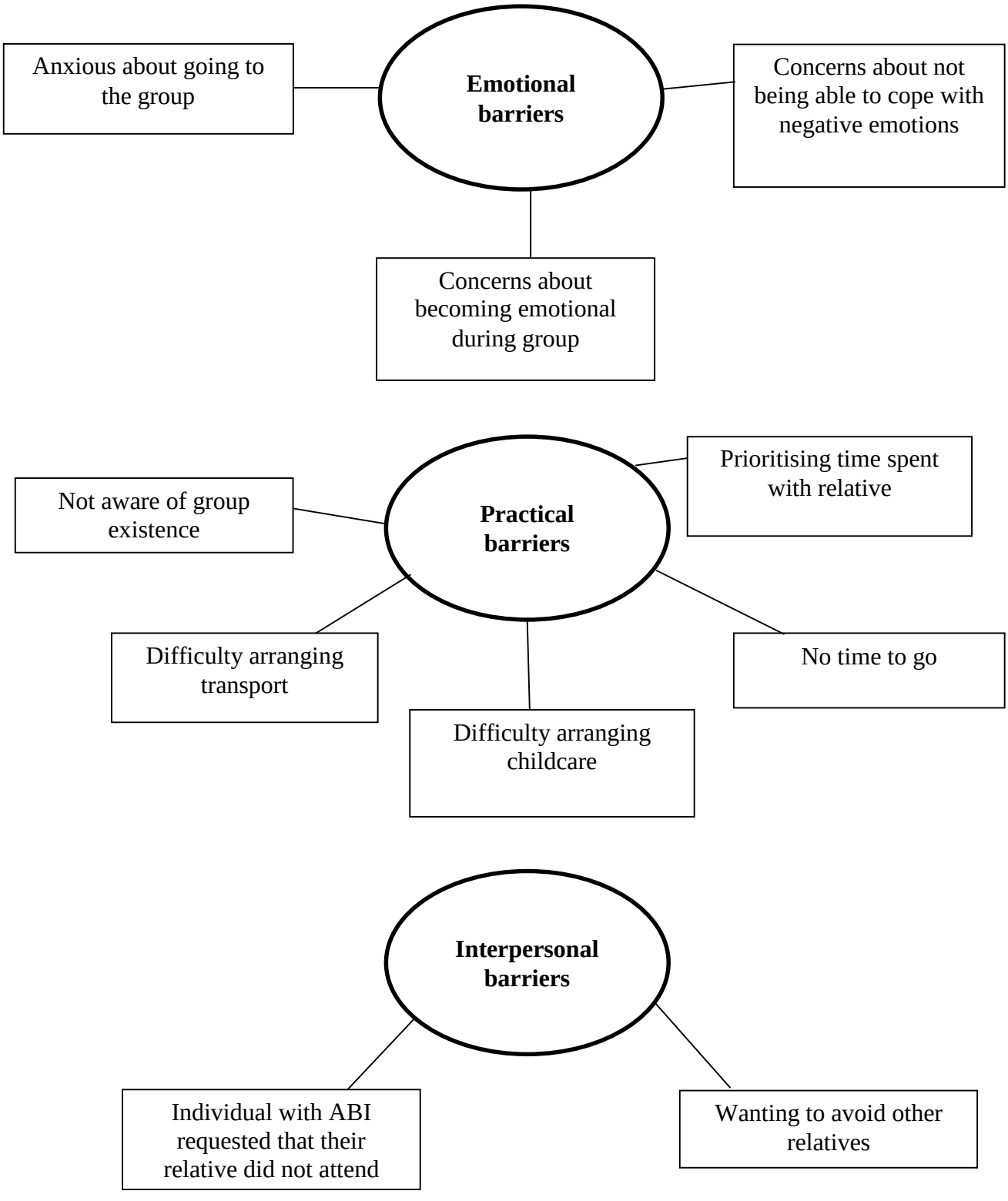

Figure 3. Initial thematic map of barriers to group attendance, showing 3 main themes

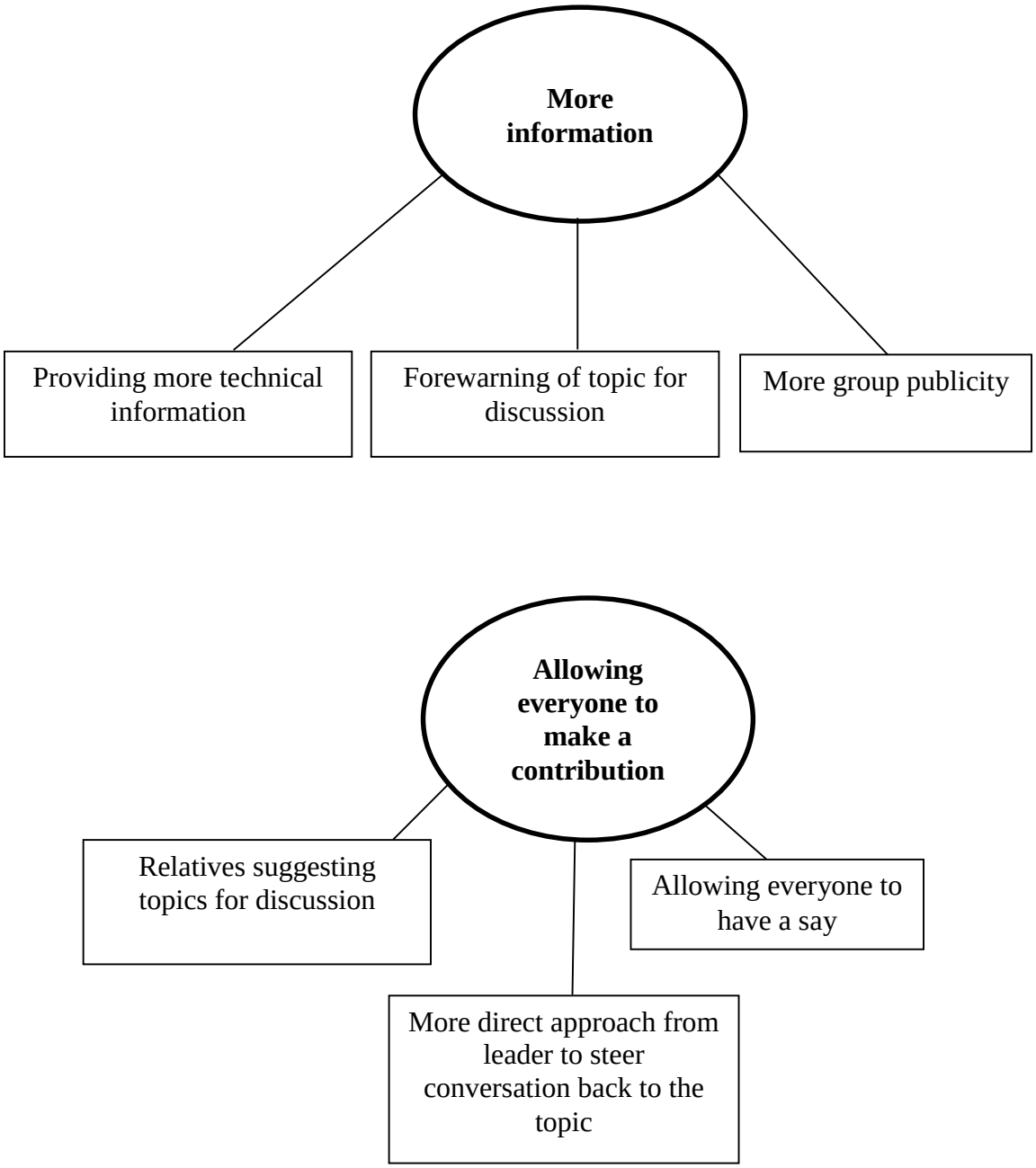

Figure 4. Initial thematic map of suggestions for group improvement, showing 2 main themes

Appendix H. Information Leaflet for Relatives

BIRU Relative Support Group

A friendly and welcoming support group for relatives and close friends of patients at the BIRU

The group runs on the first Tuesday of every month between 5:30 – 6:30pm

the huntercombe group

What is it?

The relative support group is a group meeting facilitated by Dr. Alana Tooze (Clinical Psychologist) and Dr. Simon Gerhand (Consultant Clinical Neuropsychologist) that offers relatives and close friends of individuals at the unit a space to learn more about the effect of brain injury, share their experiences and ask any questions they may have.

The meetings involve a presentation and time for discussion afterwards.

When is it?

The meetings for 2014 will be between 5:30 and 6:30pm and will run on:

- **Tuesday 5th August**
- **Tuesday 2nd September**
- **Tuesday 7th October**
- **Tuesday 4th November**
- **Tuesday 2nd December**

What do relatives enjoy about the group?

"The opportunity to listen to other carers and how they cope"

"The opportunity to ask questions...to know that staff are approachable"

"Gaining more insight into brain injuries and how to cope with different situations"

"Reassuring to know that other people are in the same situation as us"

What will I have to share?

It is important to know that you do not have to talk about anything that is upsetting or personal and the group facilitators will never directly ask you a question.

Also, we ask that everything that is discussed in the group remains completely confidential. That means that we expect all individuals to keep what is shared by others within the group.

What will it involve?

There are four main topics that are covered in the group, with one topic per week. These are:

1. **Rehabilitation after brain injury**

This is an introduction to the various types of brain injury and how people can be affected. It also includes the difference between recovery and rehabilitation and a brief overview of some of the strategies that can be used.

2. **Looking after yourself whilst supporting your loved one**

The main part of the session looks at the signs of carer burnout and strategies for relative self-care. The manager of the charity Headway also attends this session to inform relatives of local support.

3. **Emotions following brain injury**

This session looks at how emotions can be felt and expressed differently after a brain injury and how this links to behaviour. We also discuss relative's reactions to these changes.

4. **Brain injury - what happens in the long term?**

This topic explores how people cope several years after their injury with things such as living independently, returning to work and maintaining relationships.

You do not have to attend all the groups and you are able to choose which topics are most interesting to you. We are also setting up a suggestions box which you can suggest future topics for discussion.

How can it help?

We know that having a relative with a head injury can be confusing, upsetting and stressful. However, having the opportunity to talk about this and meet other people who are also experiencing similar situations and emotions can be helpful.

Please ask at Reception if you would like more details about the group – we look forward to seeing you there!

Appendix I. Instructions for Authors: Clinical Rehabilitation

Clinical Rehabilitation is a highly ranked, peer reviewed scholarly journal. It is a multi-professional journal covering the whole field of disability and rehabilitation, publishing research and discussion articles which are scientifically sound, clinically relevant and sometimes provocative. The journal acts as a forum for the international dissemination and exchange of information amongst the large number of professionals involved in rehabilitation. The leading journal in its field, *Clinical Rehabilitation* combines clinical application of scientific results and theoretical aspects in an ideal form. It gives high priority to articles describing effectiveness of therapeutic interventions and the evaluation of new techniques and methods.

1. Peer review policy

The journal's policy is to obtain at least two independent reviews of each article. It operates a double-blind reviewing policy in which the reviewer's name is always concealed from the submitting author; authors may choose to reveal their name but the journal otherwise leaves the article anonymous. Referees will be encouraged to provide substantive, constructive reviews that provide suggestions for improving the work and distinguish between mandatory and non-mandatory recommendations.

All manuscripts accepted for publication are subject to editing for presentation, style and grammar. Any major redrafting is agreed with the author but the Editor's decision on the text is final.

2. Article types

The journal publishes original papers, systematic reviews, Rehabilitation in Practice articles correspondence relating to published papers and short reports. Other article types should be discussed with the editor before submission.

2.1 Summary of manuscript structure:

- A title page with names and contact details for all authors
- A structured abstract of no more than 250 words (the website checks this)
- The text (usually Introduction, Methods, Results, Discussion)
- Clinical Messages (2-4 bullet points, 50 words or less)

- Acknowledgements, author contributions, competing interests and funding support
- References (Vancouver style)
- Tables, each starting on a new page
- Figures, each starting on a new page
- Appendix (if any)

Please note that short reports follow a different format:

- The main text of a short report will usually be between 1000 and 1500 words in length.
- A short report should have sufficient key references to cover all important points, but no more and usually there will be a maximum of 15 references.
- Tables and figures can be very efficient and effective ways of presenting data. A short report will usually have no more than three tables and figures (in total) and most will be restricted to two.

Further information on short reports can be found here.

3. How to submit your manuscript

Before submitting your manuscript, please ensure you carefully read and adhere to all the guidelines and instructions to authors provided below. Manuscripts not conforming to these guidelines may be returned. If you would like to discuss your paper prior to submission, please contact the Editor (Derick Wade) at: clinical.rehabilitation@sagepub.co.uk. *Clinical Rehabilitation* has a fully web-based system for the submission and review of manuscripts. All submissions should be made online at the *Clinical Rehabilitation* SAGETRACK website: http://mc.manuscriptcentral.com/clinrehab. Note: Online submission and review of manuscripts is now used for all types of papers.

<u>New Submission</u>

Submissions should be made by logging in and selecting the Author Centre and the 'Click here to Submit a New Manuscript' option. Follow the instructions on each page, clicking the 'Next' button on each screen to save your work and advance to the next screen. If at any stage you have any questions or require the user guide, please use the 'Get Help Now' button at the top right of every screen. Further help is available through ScholarOne's® Manuscript CentralTM customer support at +1 434

817 2040 x 167 or email the editor with your manuscript as an attachment(s) and write a note to explain why you need to submit via this route.

If you would like to discuss your paper prior to submission please contact the Editor: clinical.rehabilitation@sagepub.co.uk, and if you wish to seek advice on the submission process please contact the Publishing Editor: charlotte.jardine@sagepub.co.uk

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Within your Journal Contributor's Publishing Agreement you will be required to make a certification with respect to a declaration of conflicting interests. It is the policy of *Clinical Rehabilitation* to require a declaration of conflicting interests from all authors enabling a statement to be carried within the paginated pages of all published articles. Please include any declaration at the end of your manuscript after any acknowledgements and prior to the references, under a heading 'Conflict of Interest Statement'. If no declaration is made, the following will be printed under this heading in your article: 'None Declared'. Alternatively, you may wish to state that 'The Author(s) declare(s) that there is no conflict of interest'.

When making a declaration, the disclosure information must be specific and include any financial relationship that all authors of the article have with any sponsoring organization and the for-profit interests that the organisation represents, and with any for-profit product discussed or implied in the text of the article. Any commercial or

financial involvements that might represent an appearance of a conflict of interest need to be additionally disclosed in the covering letter accompanying your article to assist the Editor in evaluating whether sufficient disclosure has been made within the Conflict of Interest statement provided in the article.

6. Other conventions

6.1 Informed Consent

Authors are required to ensure that the following guidelines are followed, as recommended by the International Committee of Medical Journal Editors ("Uniform Requirements for Manuscripts Submitted to Biomedical Journals": http://www.icmje.org/urm_full.pdf).

Patients have a right to privacy that should not be infringed without informed consent. Identifying information, including patients' names, initials, or hospital numbers, should not be published in written descriptions, photographs, and pedigrees unless the information is essential for scientific purposes and the patient (or parent or guardian) gives written informed consent for publication. Informed consent for this purpose requires that a patient who is identifiable be shown the manuscript to be published. Complete anonymity is difficult to achieve, however, and informed consent should be obtained if there is any doubt. For example, masking the eye region in photographs of patients is inadequate protection of anonymity. If identifying characteristics are altered to protect anonymity, such as in genetic pedigrees, authors should provide assurance that alterations do not distort scientific meaning and editors should so note. When informed consent has been obtained it should be indicated in the submitted article. Authors should identify individuals who provide writing/administrative assistance, indicate the extent of assistance and disclose the funding source for this assistance. Identifying details should be omitted if they are not essential.

6.2 Ethics

When reporting experiments on human subjects, indicate whether the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional or regional) or with the Declaration of

Helsinki 1975, revised Hong Kong 1989. Do not use patients' names, initials or hospital numbers, especially in illustrative material. When reporting experiments on animals, indicate which guideline/law on the care and use of laboratory animals was followed.

7. Acknowledgements

Any acknowledgements should appear first at the end of your article prior to your Declaration of Conflicting Interests (if applicable), any notes and your References.
All contributors who do not meet the criteria for authorship should be listed in an `Acknowledgements' section. Examples of those who might be acknowledged include a person who provided purely technical help, writing assistance, or a department chair who provided only general support. Authors should disclose whether they had any writing assistance and identify the entity that paid for this assistance.

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9.1 File types

Only electronic files conforming to the journal's guidelines will be accepted. Preferred formats for the text and tables of your manuscript are Word DOC, and tiff or jpeg for figures (ideally figures will use journal colours). RTF, XLS and LaTeX files are also accepted. Please also refer to additional guideline on submitting artwork [and supplemental files] below.

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Clinical Rehabilitation conforms to the SAGE house style. Click here to review guidelines on SAGE UK House Style, which is summarised in 2.1.

9.3 Reference Style

Clinical Rehabilitation operates a SAGE Vancouver reference style. Click here to

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9.4. Manuscript Preparation

The text should be double-spaced throughout and with a minimum of 3cm for left and right hand margins and 5cm at head and foot. Text should be standard 10 or 12 point. SI units should be used throughout the text.

9.4.1 Keywords and Abstracts

The title, keywords and abstract are key to ensuring that readers find your article online through online search engines such as Google. Please refer to the information and guidance on how best to title your article, write your abstract and select your keywords by visiting SAGE's Journal Author Gateway Guidelines on How to Help Readers Find Your Article Online.

9.4.2 Corresponding Author Contact details

Provide full contact details for the corresponding author including email, mailing address and telephone numbers. Academic affiliations are required for all co-authors.

Appendix J. Participant Evaluation Sheet

How enjoyable have you found the Pesky gNATs programme?

Not at all enjoyable	*Not really enjoyable*	*Kind of enjoyable*	*Very enjoyable*	*Extremely enjoyable*
0	1	2	3	4

How helpful have you found the Pesky gNATs programme?

Not at all helpful	*Not really helpful*	*Kind of helpful*	*Very helpful*	*Extremely helpful*
0	1	2	3	4

Would you recommend the game to a friend?

Yes No

What were the most useful things about Pesky gNATs?

What could be improved?

Any other comments?

Thank you for your feedback!

Appendix K. Participant Appointment Letter

Private & Confidential

Specialist Children's Services
Community Child & Adolescent Mental Health Service (CAMHS)
Including Learning Disability Team

Dear.....

I am writing to you following a telephone conversation we had earlier today. We discussed whether your son/daughter would be interested in taking part in a research study whilst they are on the waiting list for Cognitive Behaviour Therapy (CBT).

This letter is inviting your son/daughter to take part in a pilot study to investigate the effectiveness of a computerised Cognitive Behavioural Therapy (cCBT) programme designed to reduce symptoms of anxiety and depression for adolescents aged between 13 and 18 years. If you both decide that you would like to take part, your son/daughter will need to attend the clinic for seven individual therapy sessions lasting 45 minutes each. In these sessions, your son/daughter will complete a computerised game which will involve learning about CBT, how to recognise the thinking styles that lead to negative emotions and how to use various coping strategies. We anticipate that this intervention will allow your son/daughter to understand more about their difficulties and to learn different coping strategies.

I have included a Participant Information Sheet, a Consent Form and some questionnaires (2 for parents and 4 for adolescents). If you are happy for your child to take part in this study, please read the information sheet, sign the consent form, complete the questionnaires and return them in the stamped addressed envelope provided.

The first appointment has been made for your child:

On: Day/Date/Month/Year

At: XX

If you do not wish for your child to take part, or are unable to attend the appointment, please call ..... in order to cancel or rearrange.

Please bring the completed forms to your first session.

Yours Sincerely

Rosanna Chapman
Trainee Clinical Psychologist

Under supervision of Dr. Mags Patterson, Lead Clinical Psychologist and Professor Paul Salkovskis, Professor of Clinical Psychology

Cc: File (this will ensure that the CAMHS case co-ordinator is aware of their participation in the study)

Appendix L. Participant Information Sheet

Information Sheet

"Pesky gNATs": A pilot study to investigate the outcomes of a computerised Cognitive Behavioural Therapy (cCBT) programme for adolescents with depression and anxiety

We are inviting you to take part in a research study looking at the effectiveness of a computerised Cognitive Behavioural Therapy (cCBT) programme called "Pesky gNATs" designed to reduce symptoms of anxiety and depression for adolescents aged between 13 and 18 years old.

Before you decide whether or not to take part, it is important for you to understand why the research is being done and what it will involve. Please take time to read this information sheet carefully and discuss it with others if you wish.

What is the study about?

Evidence suggests that standard Cognitive Behavioural Therapy (CBT) works well for young people with anxiety and depression. Recently, a computer game called "Pesky gNATs" was developed for adolescents to help them develop coping strategies for managing anxiety and depression. The aim of this study is to find out how the game can help young people and their experience of using it.

Why have I been chosen?

We are asking around 30 young people with depression and/or anxiety to take part in the study. You have been chosen because you have been placed on a waiting list for standard CBT for anxiety and/or depression and we want to offer you extra support while you wait. This means that once the study has finished, you will still receive standard CBT as planned, should you feel that you need further support.

Do I have to take part?

No – only take part if you want to and if you decide to take part, you can withdraw at any time.

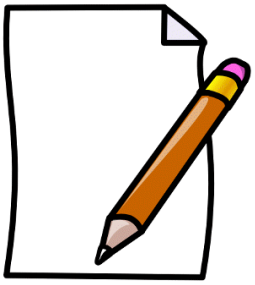
What do I have to do?

If you do decide to take part, the researcher will offer you a time to come to XX to complete 7 sessions of the computer programme. You and your parents will be asked to fill in some questionnaires before you start the programme, at the end of the programme and 1 month after the programme has finished. The questionnaires will ask you about your mood, strength and difficulties, self-esteem and beliefs about yourself. We will also ask you for your feedback on the game. Your responses are important to us and will remain completely anonymous but you do not have to complete any questions that you do not feel comfortable to answer.

What are the possible benefits of taking part?

A possible benefit of taking part in the study is that you will be receiving support from a mental health professional whilst you are on the waiting list for CBT. Previous research has demonstrated that cCBT is successful in reducing symptoms of anxiety and depression and so it is possible that you will benefit from completing the programme, although this cannot be guaranteed.

What are the disadvantages of taking part?
There are no disadvantages to taking part in the study, aside from having to attend appointments to complete the treatment, but if you are worried about anything, please ask. Should you wish to stop doing the "Pesky gNATs" game once you have started, you will be followed up by a member of the CAMHS team, which will most likely be the person who you saw for your initial appointment.



Will my taking part in this study be kept confidential?
If you agree to take part in this study, all of the questionnaire information that you give us will be anonymous and we will not be able to identify you from your data. However, as you are currently under the care of the Child and Adolescent Mental Health Service, your participation in the study will be known by the clinical team and your GP and some information may be shared with them on a strictly need to know basis, which is routine clinical practice.

If at any point you tell the researcher that you are worried about harm to yourself or harm to others, the researcher will have to tell the CAMHS clinician who met you for your initial appointment. This is to keep you safe. The researcher will also have access to your clinical file during the study but will follow the relevant data protection and confidentiality policies. At the end of the 7 sessions, the researcher will meet with your named CAMHS clinician to feedback your progress.

What will happen to the results of the research study?
The results of the study will be written up into a report and may also eventually be published in an academic journal, as well as possibly being used in academic presentations. All data will be completely anonymous and no personal information will be used in any publication of the results.

Who is organising and reviewing the research?
The University of Bath is funding and sponsoring the research. This study has been reviewed and approved by the Weston Area Health Trust Research and Development department and the Wales Research Ethics Committee 1.

What if something goes wrong?
It is very unlikely that anything will go wrong during the study, but please talk to the researcher or your CAMHS clinician if you are worried or upset about anything. Should you have any complaints during or after the study, you can contact the Academic Supervisor, Professor Paul Salkovskis (Professor of Clinical Psychology at the University of Bath), to discuss your complaints and consider next steps of action to resolve your concerns.

Who can I contact if I have questions?
The main researcher is Rosanna Chapman, Trainee Clinical Psychologist at the University of Bath who you can contact on: *r.chapman@bath.ac.uk*

The Field Supervisor is Dr Mags Patterson, Lead Clinical Psychologist who is based at XX

The Academic Supervisor is Professor Paul Salkovskis at the University of Bath who you can contact on: *pms33@bath.ac.uk* or *01225385506*
Or you look at this website for general information about clinical research http://www.crncc.nihr.ac.uk/ppi

Thank you for reading this and for your interest in the study!

Appendix M. Participant Consent Form

"Pesky gNATS": A pilot study to investigate the outcomes of a computerised Cognitive Behavioural Therapy (cCBT) programme for adolescents with depression and anxiety

Consent Form

Researchers: Rosanna Chapman and Dr Mags Patterson
Participant Identification Number: ☐

Please initial box

1. I confirm that I have read and understand the information sheet for the above study and have had the opportunity to ask questions. ☐

2. I understand that my participation is voluntary and that I am free to stop the research at any time without giving any reason, without my clinical care being affected. ☐

3. I understand that the information I provide will be collected fairly, will remain secure and confidential, and will be held no longer than necessary for the purposes of this research. ☐

4. I agree to take part in the above study. ☐

5. I agree for the researcher to access my clinical file and to share my progress with professionals involved in my care on a strictly need to know basis. ☐

6. I agree that a copy of this consent form can go into my CAMHS file. ☐

Name of participant (or parent if under 16)	Date	Signature

Name of Researcher	Date	Signature

1 copy for participant; 1 copy for researcher; 1 copy to be kept in file

PLEASE KEEP YOUR COPY OF THE INFORMATION SHEET

Appendix N. Instructions for Authors: Journal of Behaviour and Cognitive Psychotherapy

Editorial Office

Professor Paul M Salkovskis – Editor Ms Lydia Holt – Editorial Assistant Department of Psychology
University of Bath
Bath, BA2 7AY, UK Tel: 01225 38 6930
E-mail: **journal.office@babcp.com**

Manuscript preparation

A Word document of the manuscript must be submitted electronically at **http://mc.manuscriptcentral.com/babcp** and original figures and tables should be supplied in a separate document (do not embed figures and table within the text). **Articles must be under 5,000 words** including references (except Brief Clinical Reviews) and be typed double-spaced throughout allowing wide margins all round. Where unpublished material e.g. behaviour rating scales, therapy manuals etc., is referred to in an article, copies should be submitted as an additional document where copyright allows to facilitate review. Articles must be written in English and not submitted for publication elsewhere.

Submissions will be sent out for review exactly as submitted. Authors who want a blind review should indicate this at the point of submission of their article, omitting details of authorship and other identifying information from the main manuscript but including a separate title page. Submission for blind review is encouraged.

Abbreviations where used must be standard. The Systeme International (SI) should be used for all units: where metric units are used the SI equivalent must also be given. Probability values and power statistics should be given with statistical values and degrees of freedom (e.g. $F(1,34) – 123.07.$ $p<.001$), but such information may be included in tables rather than in the main text. Spelling must be consistent within an article, either using British usage (The Shorter Oxford English Dictionary), or American usage (Webster's new collegiate dictionary).

However, spelling in the list of references must be literal to each publication. Details of style not specified here may be determined by reference to the Publication Manual of the American Psychological Association or the style manual of the British Psychological Society.

Manuscripts should conform to the following scheme:

a. *Title page.* The title should phrase concisely the major issues. Author(s) to be given with departmental affiliations and addresses, grouped appropriately. A running head of no more than 40 characters should be indicated, plus 4 keywords. b. Abstract. The abstract should be structured under the headings: **Background, Aims, Method, Results, Conclusions**. It should include up to six key words that could be used to describe the article. This should summarize the article in no more than 250 words. c. *Text.* This should begin with an introduction, succinctly introducing the point of the paper to those interested in the general area of the journal. Attention should be paid to the Editorial Statement that is accessed online. References within the text should be given in the form of Jones and Smith (1973) or (Jones and Smith, 1973). When there are three or up to and including five authors the first citation should include all authors; subsequent citations should be given as Williams et al. (1973). Authors with the same surname should be distinguished by their initials. The appropriate positions of tables and figures should be indicated in the text. Footnotes should be avoided where possible. d. *Reference note(s).* A list of all cited unpublished or limited circulation material, numbered in order of appearance in the text, giving as much information as possible about extant manuscripts. e. *References*. All citations in the text should be listed in strict alphabetical order according to surnames. Multiple references to the same author (s) should be listed chronologically, using a, b, etc., for entries within the same year. Formats for journal articles, books and chapters should follow these examples:

Kaltenthaler, E., Parry, G. and Beverley, C. (2004). Computerised cognitive behaviour therapy: a systematic review. *Behavioural and Cognitive Psychotherapy* ,
32, 31–55. doi:10.1017/S135246580400102X.

Tharp, R.G. and Wetzel, R.J. (1969). Behaviour Modification in the natural environment, New York: Academic Press.

Roskies, E. and Lazarus, R.S. (1980). Coping theory and the teaching of coping skills. In P.O. Davidson and S.M. Davidson (Eds), Behavioural medicine: changing health lifestyles. New York: Brunner/Mazel.

f. *Footnotes*. The first, and preferably only, footnote will appear at the foot of the first page of each article, and subsequently may acknowledge previous unpublished presentation (e.g.

dissertation, meeting paper), financial support, scholarly or technical assistance, or a change in affliction. A concluding (or only) paragraph must be the name and full mailing address of the author to whom reprint requests or other enquires should be sent.

g. *Tables*. Tables should be numbered and given explanatory titles.

h. *Figure captions*. Numbered captions should be typed on a separate page.

i. *Figures*. Original drawings or prints must be submitted for each line or half-tone illustration.

j. *Required Sections*

Acknowledgements

You may acknowledge individuals or organisations that provided advice, support (non-financial). Formal financial support and funding should be listed in the following section.

Financial support

Please provide details of the sources of financial support for all authors, including grant numbers. For example, "This work was supported by the Medical research Council (grant number XXXXXXX)". Multiple grant numbers should be separated by a comma and space, and where research was funded by more than one agency the different agencies should be separated by a semi-colon, with "and" before the final funder. Grants held by different authors should be identified as belonging to individual authors by the authors' initials. For example, "This work was supported by the Wellcome Trust (A.B., grant numbers XXXX, YYYY), (C.D., grant number ZZZZ); the Natural Environment Research Council (E.F., grant number FFFF); and the National Institutes of Health (A.B., grant number GGGG), (E.F., grant number HHHH)". Where no specific funding has been provided for research, please provide the following statement: "This research received no specific grant from any funding agency, commercial or not-for-profit sectors."

Conflict of interest

Please provide details of all known financial, professional and personal relationships with the potential to bias the work. Where no known conflicts of interest exist, please include the following statement: "None."

EDITORIAL STATEMENT

Behavioural and Cognitive Psychotherapy is an international multidisciplinary journal for the publication of original research, of an experimental or clinical nature, that contributes to the theory, practice and evaluation of behaviour therapy. As such, the scope of the journal is very broad and articles relevant to most areas of human behaviour and human experience, which would be of interest to members of the helping and teaching professions, will be

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Other types of case report can be submitted for the Brief Clinical Reports section.
The following types of articles are suitable for *Behavioural and Cognitive Psychotherapy:*
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• Review or discussion articles that are based on empirical data and that have important new theoretical, conceptual or applied implications.
• Brief reports and systematic investigations in single case employing innovative techniques and/or approaches.
Articles should concern original material that is neither published nor under consideration for publication elsewhere. This applies to articles in languages other than English.